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DISTRICT OF NEVADA

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UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

14 SHUFFLE MASTER, INC.,) CASE NO. CV-N-04-0407-HDM-(RAM)
15 Plaintiff,)
16 v.) DEFENDANTS' JOINT RESPONSIVE
17) CLAIM CONSTRUCTION BRIEF
18)
19 MP GAMES LLC D/B/A MINDPLAY GAMES;)
ROBERT MOUCHOU; ALLIANCE GAMING)
CORP. D/B/A BALLY GAMING AND)
SYSTEMS; BALLY GAMING, INC.,)
20)
21 Defendants)
22 _____)
23 AND RELATED COUNTER-CLAIMS)
24)
25)
26)
27)
28)

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Pursuant to the Joint Discovery Plan and Scheduling Order entered on October 25, 2004 (the "Scheduling Order"), Defendants and Counterclaim-Plaintiffs MP Games LLC, Robert Mouchou, Alliance Gaming Corp., and Bally Gaming, Inc. (collectively, "Defendants") hereby submit this Joint Responsive Claim Construction Brief. Pursuant to the Scheduling Order, this responsive brief addresses the patents-in-suit asserted by Plaintiff Shuffle Master: U.S. Patent No. 6,313,871 ("the '871 patent") and U.S. Patent No. 5,781,647 ("the '647 patent") addressed in Plaintiff Shuffle Master, Inc.'s Opening Claim Construction Brief.

Preliminary Statement

Plaintiff Shuffle Master has asserted two patents in this litigation. Each patent purports to disclose inventions that could be part of a casino gaming table monitoring system. The two patents were developed independently and are only loosely related.

The '647 Patent -- issued to Glenn Fishbine and Jack Klingert on July 14, 1998 -- is titled "Gambling Chip Recognition System." The '647 Patent discloses use of an imager and a frame digitizer to capture images of chips on a gaming table, which are then analyzed to determine the quantity of chips being wagered. The '647 Patent employs a method of identifying the edges of individual gambling chips to determine how many chips a player is wagering.

The '871 Patent -- issued to Oliver Schubert on November 6, 2001 -- is titled "Apparatus and Method For Monitoring Gambling Chips." The '871 Patent discloses the use of video cameras to capture activity on a gaming table. Unlike the '647 patent, which is cited prior art to the '871 patent, Schubert's patent does not disclose analysis of information gathered by video cameras on the table. Rather, the '871 Patent merely discloses the use of video cameras for viewing play on a gaming table, and a method for activating and deactivating the video cameras based on certain events, such as the placement of a dealer's hand over a sensor, or the placement of cards in front of the dealer.

Plaintiff's opening claim construction brief improperly attempts to explain the claim language by seeking constructions that eliminate clear limitations and by ignoring representations made to the Patent Office during prosecution. For example, Plaintiff would read claims in the '871 Patent requiring a response to a first event and a second event as requiring only a single event. Similarly, Plaintiff would ignore the representations to the Patent Office made by the applicants for the '647 Patent that specifically

1 explain the identification of chip edges. In contrast, as detailed below, Defendants' proposed
 2 constructions properly are based on the ordinary meaning of the claim terms and the intrinsic evidence.¹
 3 Accordingly, Defendants' proposed constructions should be adopted by the Court.

4 **Argument**

5 **I. THE LEGAL PRINCIPLES GOVERNING CLAIM CONSTRUCTION**

6 Construction of patent claims is a pure matter of law for the Court to decide. Markman v.
Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370, 372 (1996).
 7 The words in a claim should be given their ordinary meaning as they would be understood by a person of
 8 ordinary skill in the art. Markman, 52 F.3d at 986; Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576,
 9 1582 (Fed. Cir. 1996).

10 The scope of a patent claim is determined by looking at the intrinsic evidence of record -- the
 11 claim language, the specification, and the prosecution history. See Optical Disc Corp. v. Del Mar
Avionics, 208 F.3d 1324, 1334 (Fed. Cir. 2000); Bell & Howell Document Mgmt. Prods. Co. v. Altek
 12 Sys., 132 F.3d 701, 705 (Fed. Cir. 1997). Dictionary definitions, although traditionally viewed as a form
 13 of extrinsic evidence, hold a special place in claim construction; the Court may consult them along with
 14 the intrinsic evidence "so long as the dictionary definition does not contradict any definition found in or
 15 ascertained by a reading of the patent documents." See Vitronics Corp., 90 F.3d at 1584 n.6.

16 While patent claims are to be interpreted in light of the specification and the prosecution history,
 17 and with a view to ascertaining invention, "the claim construction inquiry . . . begins and ends in all cases
 18 with the actual words of the claim." Searfoss v. Pioneer Consolidated Corp., 374 F.3d 1142, 1149 (Fed.
 19 Cir. 2004) (quoting Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998)).
 20 However, claims must be construed in light of the specification of the patent as they would be by those of
 21 ordinary skill in the art. Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 867 (Fed. Cir. 1985).

22 Where the intrinsic evidence is unambiguous, extrinsic evidence should not be considered. See
SRI International v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1118 (Fed. Cir. 1985); Vitronics
Corp., 90 F.3d at 1584. Plaintiff's heavy reliance on the testimony of its expert, Dr. Castleman, and his

28 ¹ For the Court's convenience, a chart setting forth the parties' proposed claim constructions is
 attached to the Supplemental Declaration of W. Paul Schuck as Exhibit S.

1 textbook is particularly improper. "When the intrinsic evidence is unambiguous, it is improper for the
 2 court to rely on extrinsic evidence such as expert testimony for the purposes of claim construction." Bell
 3 & Howell, 132 F.3d at 706. While expert testimony may be used to enhance a court's understanding of the
 4 technology, a court should be careful to not rely upon expert testimony in determining the meaning of
 5 claim language. See EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 892 (Fed. Cir. 1998)
 6 ("expert testimony should only be received for the purpose of educating the judge"). Even in those rare
 7 cases where extrinsic evidence is admissible, expert testimony is disfavored compared to other extrinsic
 8 evidence. See Vitronics, 90 F.3d at 1585; Farouda Laboratories v. Dwin Electronics, Inc., 76 F. Supp.
 9 299, 1003 (N.D. Cal. 1999) (Expert testimony is to be eschewed and used only as a last resort. There is a
 10 clear preference for other types of extrinsic evidence such as dictionaries and prior art documents.").
 11

12 A court may depart from the ordinary meaning in only a few instances. See CCS Fitness, Inc. v.
 13 Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002). For example, "a patentee is free to be his
 14 own lexicographer...[so long as] any special definition given to a word [is] clearly defined in the
 15 specification." Markman, 52 F.3d at 980 (citations omitted). However, a claim is given a special meaning
 16 only where the patentee clearly defines a term differently in the specification or the prosecution history.
 17 See CCS Fitness, 288 F.3d at 1366; Bell Atlantic Network Serv., Inc. v. Covad Comms. Group, Inc., 262
 18 F.3d 1258, 1268 (Fed. Cir. 2001). In addition, a claim term is not given its ordinary meaning if that would
 19 conflict with the patent applicant's description of a particular feature as the "invention," or as "important
 20 to the invention." See Bell Atlantic, 262 F.3d at 1268; SciMed Life Systems, Inc. v. Advanced Cardio.
 21 Sys., Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2001); Watts v. XL Systems, Inc., 232 F.3d 877, 883 (Fed. Cir.
 22 2000). Further, a claim term is not given its ordinary meaning if the patentee distinguished that term from
 23 the prior art. CCS Fitness, 288 F.3d at 1366-67; SciMed, 242 F.3d at 1341.

24 In construing claims the Court should presume that "separate claims are of different scope." Smith
 25 & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1310 (Fed. Cir. 2001); Telemac Cellular Corp. v. Topp
 26 Telecom, Inc., 247 F.3d 1316, 1325 (Fed. Cir. 2001). Indeed, "[u]nder the doctrine of claim
 27 differentiation, it is presumed that different words used in different claims result in a difference in
 28 meaning and scope for each of the claims." Clearstream Wastewater Sys., Inc. v. Hydro-Action, Inc., 206
 F.3d 1440, 1446 (Fed. Cir. 2000).

Finally, a claim is construed in light of the claim language, the other claims, the specification, the prosecution history, and the relevant prior art and other extrinsic evidence; a claim term is not construed in light of the accused device. Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141 (Fed. Cir. 1997). Only after the claims have been construed properly, without reference to the accused device, are the properly construed claims compared to the accused device to determine infringement. See, e.g., Renishaw PLC, 158 F.3d at 1247-48.

II. CONSTRUCTION OF THE '871 PATENT

A. Summary of the '871 Patent and Its Prosecution History

Oliver Schubert submitted U.S. Pat. Appl. No. 09/253,178, for an "Apparatus and Method for Monitoring Gambling Chips" on February 19, 1999, seven months after the '647 Patent issued. See Supplemental Declaration of W. Paul Schuck ("Schuck Supp. Decl."), Ex. A, '871 Patent. The '871 Patent issued without any office actions on November 6, 2001. Id.

The '871 Patent discloses an apparatus employing video cameras and sensors for monitoring gambling chips on a gaming table. Id., at 9:11-16:60. The patent further discloses a method for using sensors which respond to predetermined events on the table to activate the video cameras to collect information regarding betting activity on the table. Id. The '871 Patent does not claim image processing. Id.

B. Defendants' Proposed Claim Constructions for the '871 Patent

1. "video camera" (claims 1-11, 13, 17, 19, 21, 25, 31, 34, 36, 38-45, 47-50, 56, 67-71)

The first claim term in the '871 Patent that needs construction is "video camera." Claim 1 is representative of the way in which the term "video camera" is used in the '871 Patent:

1. An apparatus for collecting video information relating to gaming activities, the apparatus comprising: . . .
 at least one **video camera** disposed in the volume of space above the upper surface or below the lower surface, the at least one **video camera** being adapted to collect video information pertaining to gaming activities being conducted on the upper surface of the gaming table;
 wherein the at least one **video camera** comprises a line-of-sight, which comprises an axis of the **video camera** defined between a focal point on a lens of the **video camera** and a focal point on a target at which the video camera is aimed, the **video camera** being positioned of the gaming table so that the line-of-sight of the **video camera** forms an angle with the plane of the upper surface that is less than about 45 degrees.

1 Schuck Supp. Decl., Ex. A, '871 Patent, 7:13-31 (emphasis added). The parties offer the following
 2 constructions:

3 Claim Term	4 Defendants' Construction	5 Shuffle Master's Construction
6 video camera	7 A camera for recording and/or transmitting moving visual images	8 A device capable of converting an optical image into electrical impulses and producing a sequence of still images ("frames") or data representative of still images equally spaced in time. ²

9 Defendants propose that "video camera" be construed in the '871 Patent consistently with the way
 10 that term was understood at the time the patent application was filed, and consistent with the intrinsic
 11 evidence. Defendants' construction incorporates both elements of the term video camera: a camera
 12 capable of capturing video images: "**a camera for recording and/or transmitting moving visual**
images." This definition comports with how the term "video camera" was understood in the art in 1999.

13 First, it is well-understood that a camera is a device for recording and/or transmitting images. See
 14 Schuck Supp. Decl., Ex. B, American Heritage Dictionary of the English Language ("American Heritage
 15 Dict."), 4th ed., Houghton Mifflin Co., 2000 ("1. An apparatus for taking photographs, generally
 16 consisting of a lightproof enclosure having an aperture with a shuttered lens through which the image of
 17 an object is focused and recorded on a photosensitive film or plate. 2. The part of a television
 18 transmitting apparatus that receives the primary image on a light-sensitive cathode-ray tube and
 19 transforms it into electrical impulses.").

20 Further, "video" is properly defined as "a particular stored sequence of moving images." Schuck
 21 Supp. Decl., Ex. C, Dictionary of Computer Science, Eng'g., and Tech. ("Dict. Of Comp. Science"), 2001,
 22 at 520 ("video": "(1) representation of **moving images** for storage and processing . . . (2) a particular
 23 stored sequence of **moving images**, e.g. on a tape or within a database.") (emphasis added); id., Ex. D,
 24 The New Oxford American Dictionary ("New Oxford Dict."), 2001, at 1882 ("the system of recording,
 25 reproducing, or broadcasting **moving visual images** on or from videotape.") (emphasis added).³ Thus, a

26
 27 ² Brief, at 21.

28 ³ As Plaintiff's expert recognizes, the appearance of movement results from display of multiple
 (continued...)

1 video camera is a device for recording and/or transmitting moving visual images.

2 The specification of the '871 Patent uses the term "video camera" in a manner consistent with the
 3 plain meaning proposed by Defendants. First, it should be noted that the '871 patent consistently uses the
 4 term "video camera" rather than merely "camera." The patentee certainly meant to specify that the camera
 5 was a particular type of camera--a "video" camera.

6 Moreover, the specification broadly indicates that any device may be used, but it must be capable
 7 of obtaining "video information," not merely images: "Although the present invention contemplates
 8 **virtually any type of device for collecting video information**, simple, inexpensive . . . video cameras 27
 9 can be used" Schuck Decl., Ex. A, '871 Patent, 3:66-4:3. As discussed above, "video" is well
 10 understood to mean moving images. Thus, the video camera must be a camera capable of taking moving
 11 images. Notably, the two examples of "video cameras" disclosed in the patent are both cameras that
 12 produce video signals, normally for the purpose of displaying motion. *Id.*, 3:34-37; Declaration of
 13 Professor Lynn Abbott ("Abbott Decl."), ¶ 11.

14 It cannot seriously be argued that, in describing video cameras in the specification, the '871 Patent
 15 is clearly discussing "video cameras" as defined by Defendants. For example, the specification states:

16 Casinos typically use video cameras for asset protection and dispute resolution.
 17 Traditionally video cameras are mounted on or near the ceiling. Two types of video
 18 cameras commonly used are Pan-Tilt-Zoom video cameras (PTZs) and fixed video
 19 cameras.

20 Schuck Decl., Ex. A, '871 Patent, 1:24-29. The reference to a "pan-tilt-zoom" confirms that the video
 21 cameras take moving images because "pan" is ordinarily only used in reference to such cameras. *Id.*, Ex.
 22 E, Webster's New Collegiate Dictionary, 1981, at 820 ("pan," as verb: "1: to rotate a **motion-picture** or
 23 **television camera** so as to keep an object in the picture or secure a panoramic effect"; as noun "the process
 24 of panning a **motion-picture** or **television camera**"); *id.*, Ex. B, American Heritage Dict. ("pan": "To
 25 move a **movie** or **television camera** to follow an object or to create a panoramic effect."). Thus, the

26

 27 ³ (...continued)

28 images in order, at a set rate. See Declaration of Dr. Kenneth Castleman in Support of Shuffle Master's
 29 Opening Claim Construction Brief ("Castleman Decl."), at ¶ 8; Declaration of Professor Lynn Abbott
 30 ("Abbott Decl."), at ¶ 10.

1 patentee's discussion in the specification confirms that the '871 patent addresses devices that collect
 2 moving images.

3 Plaintiff's construction appears to be aimed at writing the "video" modifier out of the term "video"
 4 camera and out of the claims entirely.⁴ Plaintiff would improperly expand the definition to encompass
 5 still cameras that do not capture moving images.

6 Because of their low cost and standardized output, video cameras are commonly used . . .
 7 to collect still images.

8 Brief, at 22.

9 Anyone who has walked into an electronics store can appreciate the difference between a video
 10 camera and a still camera, yet Plaintiff attempts to conflate the two by describing the product of a video
 11 camera as merely "a sequence of still images." The sequence and timing are critical. A still camera could
 12 be utilized to produce "a sequence of still images" -- but it would not provide video information.
 13 Likewise, just because a video camera can be used as a still camera, that does not mean that a still camera
 14 is a video camera. It is not. What makes a video camera different from a still camera is that the images in
 15 a video camera are captured closely in time and in a manner that allows what Plaintiff's expert calls the
 16 "'persistence phenomenon' of human vision" when the images are displayed. See Declaration of Dr.
 17 Kenneth Castleman in Support of Shuffle Master's Opening Claim Construction Brief ("Castleman
 18 Decl."), at ¶ 8; Abbott Decl., ¶ 10. That is, video cameras capture movement or activity in a smooth,
 19 steady fashion that replicates the visual experience in real life. Moreover, video cameras provide
 20 information to properly display the images they collect. Id., at ¶ 12. For a camera to be a "video camera,"
 21 it must generate images at a certain, rapid speed so that the images can be displayed at a corresponding
 22 speed permitting the viewer to perceive motion. Id. Plaintiff's proposed construction would omit this
 23 feature.

24 In its brief, Plaintiff further attempts to limit the definition of video cameras to exclude the
 25 recording function, asserting that "video cameras used in image processing generally do not record the

26 ⁴ In looking at Plaintiff's attempt to write "video" out of its own "video camera" claims, it is
 27 instructive to look at Plaintiff's first definition of the phrase: "A device that captures information about
 28 the appearance of an object." Schuck Supp. Decl., Ex. F, Plaintiff's Claim Construction Disclosures, at
 3. The "video" modifier is apparently a "bad fact" that Plaintiff is trying to avoid through creative
 construction.

1 images they obtain." Brief, at 22. This argument is misleading. Defendants' definition permits, but does
 2 not require, recording; Defendants' construction requires recording **or** transmission.

3 Aside from misrepresenting Defendants' construction, Plaintiff's view that the video cameras do
 4 not record is contrary to the patent's numerous references to utilizing the video cameras for recording
 5 activity on the gaming table:

6 [A] system that can allow a casino to efficiently and accurately **view and record the bets.**

7 Schuck Supp. Decl., Ex. A, '871 Patent, 1:44-46 (emphasis added).

8 Although the illustrated embodiment discloses a gaming table for card games and having
 9 seven bet positions, modified embodiments of the present invention are applicable to any
 10 gaming table or other surface where **an activity is to be monitored and/or recorded**
 11 **using video cameras.**

12 Id., 3:15-20 (emphasis added). Thus, Plaintiff's attempt to eliminate the capability of recording in the
 13 definition of video camera is meritless.

14 Plaintiff attempts to define video camera in such a way as it can later argue that any camera or
 15 imager one might employ on or around a gaming table could qualify as a "video camera." Such a
 16 construction would be improper. A claim term cannot be construed so broadly as to expand the claims
 17 beyond that which the patentee set forth. See Autogiro Co. of America v. U.S., 384 F.2d 391, 395-96 (Ct.
 18 Cl. 1967) ("The claims of the patent provide the concise formal definition of the invention . . . Courts can
 19 neither broaden nor narrow the claims to give the patentee something different than what he has set
 20 forth."); see also Rackman v. Microsoft Corp., 102 F. Supp. 2d 113, 121 (E.D.N.Y. 2000) ("To the extent
 21 plaintiff believes that 'insertable storage medium' should be construed to mean 'any storage medium,' the
 22 Court rejects that view because it seeks to read the term 'insertable' out of the claim.") (citing Becton
Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 798 (Fed. Cir. 1990)).

23 Here, to construe "video camera" so broadly as to cast a net over all cameras, or even imagers, is to
 24 read the "video" limitation out of the patent entirely. This elimination of a word in the claim is improper.
 25 See Texas Instruments Inc. v. U.S. Intern. Trade Comm'n, 988 F.2d 1165, 1171 (Fed. Cir. 1993)
 26 ("[C]onstruing the claims not to refer to a specific gate location as argued by TI would render the disputed
 27 claim language mere surplusage . . . Indeed, to construe the claims in the manner suggested by TI would
 28 read an express limitation out of the claims."); sec also Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64
 F.3d 1553, 1557 (Fed. Cir. 1995) ("We must give meaning to all the words in [patentee's] claims.").

Even Plaintiff's own evidence demonstrates that Plaintiff's construction of video camera is too expansive. In its brief, Plaintiff cites the Webster's Dictionary definition of video as "of or relating to television, especially to televised images." See Brief, at 21; see also Decl. Of Adam Gill, Exhibit Q. Plaintiff understands, then, that the word video in video camera has a specific meaning, one that Plaintiff's definition ignores. For these reasons, Defendants' proposed construction should be adopted.

2. "video information" (claims 1-38, 43-66, 69-71)

As discussed above, video cameras collect information which is capable of display in such a way as to simulate movement. Therefore, the information is collected in a manner that makes this possible. Accordingly, video information is simply "**output from a video camera.**" These are the parties' proposed constructions:

Claim Term	Defendants' Construction	Shuffle Master's Construction
video information	Output from a video camera.	At least part of one or more still images ("frames") or of data representative of still images from the output of a video camera. ⁵

Defendant's proposed construction encompasses all of the information that is collected and transmitted or recorded by a video camera. This includes both the images, the information necessary for displaying the images to produce a moving image from the individual still images (e.g., the speed at which the frames were taken), and any other information which the video camera may generate (e.g., a time stamp).

Plaintiff's proposed construction -- essentially a still image -- is too narrow and distorts the meaning of the term "video information." As Plaintiff points out, a video signal creates the appearance of moving images by presenting a rapid succession of images. Castleman Decl., at ¶ 8; see also Abbott Decl., ¶ 13. To create this perception of motion, images must be generated at a certain speed and order, and then displayed at a corresponding speed. See Abbott Decl., ¶ 13. If the capture and replay speeds are different, the appearance of the resulting presentation is distorted. Id. For example, if a video camera generates images at 30 frames a second, but those images are displayed at 100 frames per second, the result will be similar to hitting "fast-forward" on one's VCR while a tape is playing. Id. The phrase

⁵ Brief, at 21.

"video information" must, therefore, include the frame rate of image capture, as well as the images themselves. *Id.*, ¶ 14. This is necessary to create the appearance of motion. *Id.*

Plaintiff's construction of video information is too narrow, as it excludes the information its own expert acknowledges is necessary for, and employed by, video cameras in capturing, recording and replaying images. "Video information" is properly understood as output from a video camera.

3. "the at least one video camera is physically connected to the gaming table"
(claim 2)

Claim Term	Defendants' Construction	Shuffle Master's Construction
the at least one video camera is physically connected to the gaming table	The at least one video camera is fastened together or joined directly to the gaming table	The at least one video camera is physically joined or fastened to the gaming table. ⁶

The phrase "the at least one video camera is physically connected to the gaming table" in claim 2 means "**the at least one video camera is fastened together or joined directly to the gaming table.**" The dictionary definition of the word "connected" supports this definition. See e.g., Schuck Supp. Decl., Ex. B, American Heritage Dict. ("joined or fastened together"); id., Ex. G, WordNet® 2.0 ("WordNet"), Princeton University, 2000 ("joined or linked together").

Ignoring the word "physically," Plaintiff argues that the at least one camera need not be touching the gaming table. The Federal Circuit has rejected the type of loose construction of language proposed by Plaintiff. In Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996), the panel rejected the patent holder's argument that "connected to" could "be read broadly to include two distant elements which are 'connected' by intervening elements." Id. The Federal Circuit stated:

If, as [the plaintiff] argues, 'connected to' should be read broadly to include elements which are connected directly or indirectly, then this language would read on a lockout mechanism located anywhere in the surgical stapler, and the 'connected to' limitation would be meaninglessly empty.

Id. Like the patent in Ethicon, claim 2 of the '871 Patent specifically requires that the two elements to be connected -- the gaming table and the cameras -- be placed in proximity before disclosing that they should further be "physically connected." See Schuck Supp. Decl., Ex. A, '871 Patent, 9:28-29. To then construe "physically connected to" the gaming table as allowing the video camera to be physically connected

⁶ Brief, at 31.

1 through some number of intervening elements would be to render the "physically connected to" language
 2 meaningless. Under Plaintiff's suggested construction, any camera physically connected at some distant
 3 level of abstraction to the gaming table would satisfy the claim language. For example, the gaming table
 4 might be physically connected to the floor of the casino, which is in turn physically connected to the walls,
 5 which are in turn physically connected to the ceiling, to which overhead monitoring cameras are
 6 physically connected. Therefore, overhead monitoring cameras located far above the table would be
 7 "physically connected" to the table under Plaintiff's proposed construction. Such a broad construction
 8 cannot be proper. It is inconsistent with the way that the patentee used the phrase in the patent and would
 9 render the phrase "physically connected" meaningless. See Ethicon Endo-Surgery, 93 F.3d at 1578.

10 Plaintiff cites Sulfur-Tech Water Systems, Inc. v. Kohlenberg, 162 F. Supp. 2d 743, 749 (N.D.
 11 Ohio 2001) for the proposition that "physically connected to" does not require direct contact, or even
 12 proximity. However, in that case, the patent text did not require proximity between the "connected"
 13 elements. Id. at 747. Indeed, the claim language called for an "inlet port" in an apparatus for removing
 14 hydrogen sulfide from water "connected to a source of water." Id., 746. In that context, one would not
 15 expect the apparatus to be adjacent to the water--merely that there be a conduit from the source of water to
 16 the apparatus to carry the water.

17 In contrast, claim 2 of the '871 Patent, expressly requires, via incorporation of claim 1 that the "at
 18 least one video camera [be] disposed in the volume of space above the upper surface or below the lower
 19 surface [of the gaming table]." Schuck Supp. Decl., Ex. A, '871 Patent, 9:28-29. Moreover, the gaming
 20 table does not provide anything to the apparatus in the same way that the source of water provided water
 21 in Sulfur-Tech. Accordingly, Sulfur-Tech is inapposite.⁷ In order to give all terms in each of the '871
 22 Patent's claims meaning, Defendants' construction should be adopted.

23 **4. "sensor being adapted to sense an occurrence of an event on a surface of the**
 24 **gaming table (claims 19, 43)**

25 Claims 19 and 43 of the '871 Patent disclose a "sensor being adapted to sense an occurrence of an
 26 event on a surface of the gaming table":
 27

27 ⁷ The other cases cited by Plaintiff in support of its argument deal with construing the phrase
 28 "secured to," rather than the appropriate phrase from claim 2, "physically connected to," and are
 therefore not relevant.

1 19. An apparatus for collecting video information relating to activities on a gaming table,
 2 the apparatus comprising:
 3 **a sensor disposed in proximity to the gaming table, the sensor being adapted to sense an occurrence of an event on a surface of the gaming table and to output a change-of-state signal;**
 4 at least one video camera disposed in proximity to the gaming table, the at least one video camera being configured and positioned to be activated to collect the video information relating to activities on the gaming table;
 5 circuitry adapted to detect the **change-of-state signal from the sensor**, the circuitry further being adapted to activate the at least one video camera to automatically collect the video information upon the detection by the circuitry of the **change-of-state signal from the sensor.**

6
 7 Schuck Supp. Decl., Ex. A, '871 Patent, 10:54-11:3 (emphasis added).

8
 9 43. A method of collecting video information relating to activities on a gaming table, the method comprising the following steps:

10 **providing at least one sensor in proximity to the gaming table, the sensor being adapted to sense the occurrence of an event on the surface of the gaming table and to output a change-of-state signal;**

11 providing at least one video camera in proximity to the gaming table, the at least one video camera being configured and positioned to be activated to collect the video information relating to activities on the gaming table;

12 **the at least one sensor outputting a change-of-state signal, in response to the sensor sensing the occurrence of an event on the surface of the gaming table;**

13 detecting by a circuit the **change-of-state signal from the at least one sensor**; and the circuit activating the at least one video camera to automatically collect the video information, upon the detection by the circuit of the **change-of-state signal from the at least one sensor.**

14
 15 Id., 13:20-41 (emphasis added). Thus, both claim 19 and claim 43 describe a sensor sensing an event and responding by outputting a change of state signal.

16 The parties propose the following constructions:

19 Claim Term	20 Defendants' Construction	21 Shuffle Master's Construction
22 sensor being adapted to sense an occurrence of an event on a surface of the gaming table	23 Device configured to recognize the presence or absence of a predetermined physical event or condition on a surface of the gaming table and to respond with a change-of-state signal	24 No construction proposed. An event is something that happens that can be sensed. An event is not limited to predetermined physical events. ⁸

25 Defendants' construction of the "sensor" as a "**device configured to recognize the presence or absence of a predetermined physical event or condition on a surface of the gaming table and to**

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 27
 28 ⁸ Plaintiff proposed no construction, but alternatively argued for a broad construction of the term "event." See Brief, at 24.

1 respond with a change-of-state signal" is consistent with the claim language as well as the other
 2 intrinsic evidence. The parties' central dispute is over what constitutes an event.

3 In its construction, Plaintiff attempts to broaden the term "event," claiming that an event may be
 4 anything "that happens that can be sensed." See Brief, at 24. Plaintiff's proposed construction provides
 5 little guidance because it is recursive -- the "sensor" senses "anything that can be sensed." Moreover, the
 6 proposed broad definition is unsupported by the patent specification.

7 The '871 Patent provides insight into what constitutes an "event." The patent only discloses
 8 sensors that recognize two types of events: sensors that detect the presence or absence of a dealer's hand,
 9 and sensors that detect the presence or absence of cards.

10 The hand sensor 66 **detects the presence or absence of the dealer's hand when placed**
 11 **over the sensor . . .**

12 The card sensor 68 is preferably disposed directly in front of the chip tray 20. While
 dealing the first set of cards, the **dealer places his or her first card onto this card sensor**
 13 68. The card sensor 68 can comprise, for example, a CD's Photocell for reacting to changes
 in light intensity . . .

14 In a modified embodiment of the present invention either or both of the hand sensor 66 and
 15 the card sensor 68 may comprise video cameras. Video cameras used as sensors may be
 similar to the video cameras 27 or may be manufactured **having optimal characteristics**
for detecting motion or the presence of an object, as distinguished from characteristics
 16 for generating relatively high or moderate resolution images. These video cameras used to
 17 **detect certain occurrences on the gaming table 10** can be installed on or off the gaming
 table 10.

18 In yet another embodiment of the present invention either or both of the hand sensor 66 and
 19 the card sensor 68 can comprise one or more of the following types of sensors: an air
 pressure sensor **reacting to the placement or removal of the card or the dealer's hand**
on the gaming table 10; an infrared sensor **reacting to the absence or presence of body**
heat radiating from the dealer's hand; radar **reacting to the approaching hand or**
 20 **card**; and an ultrasound transmitter and receiver **reacting to the change of echo when the**
dealer's hand or a card is placed over the sensor. Other types of sensors which either or
 21 both of the hand sensor 66 and the card sensor 68 may comprise, include: a magnetic hall-
 effect sensor **reacting to the absence or presence of a small magnet located on the**
 22 **dealer's arm cuff**; an inductive touch sensor **reacting to the touch of the dealer's hand**;
 23 and a photo transmitter and receiver **reacting to the change in light intensity**. Each sensor
 or sensors can be connected to or detached from (such as being positioned on a ceiling
 above) the gaming table 10. Although specific sensor types are listed, it is to be understood
 24 that other types of sensors can be used for the purposes described herein, without departing
 25 from the invention.

1 Schuck Supp. Decl., Ex. A, '871 Patent, 5:42-6:36 (emphasis added). Every description of an "event" in
 2 the '871 Patent concerns detecting the presence or removal of an object.⁹ Thus, in light of the patent,
 3 defining the "event" as a physical event or condition is appropriate.

4 Moreover, the "event" must be predetermined. Plaintiff argues that the following specification
 5 language demonstrates that the sensor need not be limited to sensing predetermined events -- that is,
 6 events which are defined in advance:

7 Although specific sensor types are listed, it is to be understood that **other types** of sensors
 8 can be used **for the purposes described herein**, without departing from the invention.

9 *Id.* 6:34-37 (emphasis added). But Plaintiff is confusing the **type** of sensor with "an event" that the
 10 sensor detects. There is no dispute that a variety of sensor devices can be used (e.g. optical, magnetic, or
 11 air pressure). That, however, does not address what is meant by the "sensor" in the claims. The referent
 12 "purposes described herein" confirms that the sensor is used for the purposes disclosed in the patent --
 13 detecting the presence or removal of an object. That various types of devices can be used is simply not
 14 relevant. The purposes for which all the sensors described in the specification are intended, is
 15 determining either that a card has been placed in or removed from, or that a dealer's hand has been placed
 16 on or removed from, a given area of interest on the table. Those are the only purposes described, and both
 17 represent predetermined events.

18 Indeed, it would be illogical for the event **not** to be predetermined. As discussed below, detection
 19 of the event results in a signal that activates (or "no longer activate[s]") a video camera. Presumably,
 20 activation is caused **for a reason**; the sensing of any event would be nonsensical. If every time
 21 "something that happens that can be sensed" occurred on the gaming table, a change of state signal
 22 resulted, the video cameras would be activated or deactivated for no apparent reason.

23
 24
 25 ⁹ During the claim construction meet and confer, Plaintiff asserted that "winning a game" is an
 26 event which can be "sensed" by the sensors in the '871 patent. However, Plaintiff cites no text in the
 27 patent explaining how this might be accomplished. Indeed, the Patent does not disclose any such
 28 sensing of a non-physical event. Possibly, the sensor could detect the placement of additional chips or
 some such similar event, and the system could be programmed to thereby determine that a "win" or
 "loss" has occurred. But the "event" sensed by the sensor is not an abstract "win" or "loss," but rather the
 physical placement or removal of chips

Once the sensor senses the occurrence of the predetermined physical events, it performs one other primary function: outputting a signal. This function of the sensor is set forth in the text of both claim 19 and claim 43. See Schuck Supp. Decl., Ex. A, '871 Patent, 10: 57-60, 13:23-26. This change-of-state signal is imperative for the sensor to perform its role in the system, which is to cause the activation or stop activation of the video cameras. See id., 10:67, 11:1-3, 13:38-41; see also "change-of-state signal," Sect. II.A.6, infra. Absent serving this function, it is not clear what use there would be for the sensor.

The sensor, then, must be specifically programmed to only "detect certain occurrences on the gaming table" (Schuck Supp. Decl., Ex. A, '871 Patent, 6:12-13) (emphasis added) to have any use at all. These "certain occurrences" are predetermined events. This is the only way the sensors can work in order for the system to function; it is how the sensors do work in the embodiment described in the patent specification. To try to construe the sensors in any other way would be to read the patent language too broadly, and to eliminate the central function of the sensors. Therefore, Defendants' construction should be adopted.

5. "comprises a first sensor that is positioned to sense an occurrence of a first event . . . further comprises a second sensor positioned to sense an occurrence of a second event" (claim 34)

Claim Term	Defendants' Construction	Shuffle Master's Construction
comprises a first sensor that is positioned to sense an occurrence of a first event . . . further comprises a second sensor positioned to sense an occurrence of a second event	Two different sensors are configured to recognize the presence or absence of two separate and distinct predetermined events on a surface of the gaming table and to respond	No construction proposed.

The phrase "comprises a first sensor that is positioned to sense an occurrence of a first event . . . further comprises a second sensor positioned to sense an occurrence of a second event" should be construed as "**two different sensors are configured to recognize the presence or absence of two separate and distinct predetermined events on a surface of the gaming table and to respond.**" Plaintiff asserts that the language does not require construction.

Plaintiff's main objection to Defendants' construction appears to be to defining "a first event" and "a second event" as separate and distinct events. See Brief, at 26. The patent, however, makes the plain meaning of the claim language clear. Claim 34 of the '871 Patent reads as follows:

1 34. The apparatus for collecting video information relating to activities on a gaming table
 2 as set forth in claim 21, wherein:

3 the sensor comprises a **first sensor that is positioned to sense an occurrence of a first**
 4 **event** on the surface of the gaming table and to output a first change-of-state signal;
 5 the apparatus for collecting video information relating to activities on a gaming table
 6 further comprises a **second sensor positioned to sense an occurrence of a second event**
 7 on the surface of the gaming table and to output a second change-
 of-state signal; and

8 the circuitry is adapted to detect the first change-of-state signal from the **first sensor** and
 9 the second change-of-state signal from the **second sensor**, the circuitry further being
 10 adapted to activate the at least one video camera to automatically collect the video
 11 information upon the detection by the circuitry of both the first change-of-state signal from
 12 the **first sensor** and the second change of state signal from the **second sensor**.

13 Schuck Supp. Decl., Ex. A, '871 Patent, 11:65-12:17 (emphasis added).

14 Plaintiff argues that, while claim 34 discloses a "first sensor" and a "second sensor" and a "first
 15 event" and a "second event" on the surface of the gaming table, the patent does not necessarily refer to two
 16 separate and distinct events. Brief, at 26-27. That is, Plaintiff argues the "second event" might actually
 17 refer to the same event as the "first event."¹⁰ Plaintiff cannot eliminate the second event through claim
 18 construction; every word in the claim must be given meaning. See Exxon Chem. Patents, Inc. v. Lubrizol
 19 Corp., 64 F.3d 1553, 1557 (Fed. Cir. 1995) ("We must give meaning to all the words in [patentee's]
 20 claims"); Texas Instruments, Inc. v. U.S. Intern. Trade Com'n, 988 F.2d 1164, 1171 (Fed. Cir. 1993).

21 Plaintiff is again clearly attempting to broaden the '871 Patent's claims beyond the scope of the
 22 terms used, under the guise of "plain meaning." Just as a second sensor can readily be seen as distinct
 23 from a first sensor, a "second event," as described in claim 34, must be distinct from a "first event" for the
 24 term "second" to have any meaning. Had the patentee wished to disclose multiple sensors for detecting
 25 the same event, he could have done so. He did not. Accordingly, Defendants' proposed construction
 26 should be adopted.

27 6. **"change-of-state signal" (claims 19, 34, 36, 43-48, 51, 52)**

28 The parties propose to construe the term "change-of-state signal" as follows:

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 30
 31
 32
 33
 34 ¹⁰ Notably, Plaintiff does not make the analogous argument that the "second sensor" may
 35 actually be the same sensor as the "first sensor," despite parallel constructions.

Claim Term	Defendants' Construction	Shuffle Master's Construction
change-of-state signal	An electric signal, generated when a sensor, or sensors, detect(s) the occurrence of a predetermined physical event or condition on a surface of the gaming table, that causes a video camera to commence or stop recording moving visual images	No construction proposed. A change-of-state signal is a signal that results from a change-of-state device. In the '871 patent, the change-of-state signal is output from a sensor upon sensing the occurrence of an event on a gaming table. ¹¹

Defendants' construction of "change-of-state signal" is consistent with the description of that phrase in the claims and specification of the '871 Patent. The change-of-state signal is generated by a sensor, as is clear from claim 19:

19. An apparatus for collecting video information relating to activities on a gaming table, the apparatus comprising:
a sensor disposed in proximity to the gaming table, the sensor being adapted to sense an occurrence of an event on a surface of the gaming table and to output a change-of-state signal;
at least one video camera disposed in proximity to the gaming table, the at least one video camera being configured and positioned to be activated to collect the video information relating to activities on the gaming table;
circuitry adapted to detect the **change-of-state signal** from the sensor, the circuitry further being adapted to activate the at least one video camera to automatically collect the video information **upon the detection by the circuitry of the change-of-state signal from the sensor.**

Schuck Supp. Decl., Ex. A, '871 Patent, 10:55-11:3 (emphasis added).

The means by which "the at least one video camera" is activated in claim 19 and other related claims¹² is the change-of-state signal from the sensor. In the context of the cited claim language, the change-of-state signal **causes** the video cameras to activate, although that causation may be indirect. Plaintiff is correct that the change-of-state signal is sent to a circuit which then activates the cameras. See Brief at 28; Schuck Supp. Decl., Ex. A, '871 Patent, 10:66-11:3. But Plaintiff erroneously argues that because the change-of-state signal is sent to a circuit, which in turn activates the cameras, the signal itself does not "cause" the cameras to activate. See Brief at 29. Defendants' definition does not eliminate the circuitry step. While there may be an intermediary between the signal sent from the sensor and the

¹¹ See Brief, at 28.

¹² In claim 36, the change-of-state signal is also utilized to "no longer activate" the at least one video camera. See Schuck Supp. Decl., Ex. A, '871 Patent, 12:28-39.

1 camera's activation, the change-of-state signal in the '871 Patent "causes" the video camera(s) to activate.
 2 If the change-of-state signal did not perform this function, it would be superfluous -- causing the
 3 activation of the video cameras is the reason the signal exists.

4 Finally, Plaintiff further takes issue with Defendants' construction of change-of-state signal as an
 5 "electric signal." Inasmuch as the patent dictates that the signal be transmitted from a sensor to a circuit or
 6 a microprocessor, it seems clear that the signal is electric. See Schuck Supp. Decl., Ex. A, '871 Patent,
 7 10:66-11:3, 6:51-53 ("As illustrated in FIG 1, the microprocessor 50, RAM 73, hard drive 56 and video
 8 capture device 52 are all electronically interconnected . . .) (emphasis added); see also id., Ex. G,
 9 WordNet (circuit: "an electrical device that provides a path for electrical current to flow."); id., Ex. B,
 10 American Heritage Dict. (circuit: "3. *[e]lectronics*. a. A closed path followed or capable of being
 11 followed by an electric current. b. A configuration of electrically or electromagnetically connected
 12 components or devices.") For these reasons, Defendants' proposed construction of "change-of-state
 13 signal" should be adopted.

14 7. **"activate the at least one video camera"** (claims 19, 34, 36, 43-48, 51, 52)

Claim Term	Defendants' Construction	Shuffle Master's Construction
activate the at least one video camera	Instruct the video camera to commence collecting moving visual images	No construction proposed. Set in motion to begin collecting video information. ¹³

15 The phrase "activate the at least one video camera" should be understood to mean "**instruct the**
 16 **video camera to commence collecting moving visual images.**"¹⁴ This is consistent with the way that
 17 this phrase is used in the '871 Patent. Claim 19 is representative.

18
 19 19. An apparatus for collecting video information relating to activities on a gaming table,
 20 the apparatus comprising: . . .
 21 circuity adapted to detect the change-of-state signal from the sensor, the circuitry further
 22 being adapted to **activate the at least one video camera to automatically collect the**
 23 **video information** upon the detection by the circuitry of the change-of-state signal from
 24 the sensor.

25
 26
 27 ¹³ See Brief, at 30.

28 ¹⁴ Defendants agreed during the meet and confer to modify their construction by changing
 29 "recording" to "collecting."

1 Schuck Supp. Decl., Ex. A, '871 Patent, 10:55 - 11:3 (emphasis added). The highlighted text
 2 unquestionably establishes that activating refers to causing collection of moving visual images.

3 Plaintiff first suggests that no construction is required. See Brief, at 30. Alternatively, Plaintiff
 4 suggests that the Court should construe "activate the at least one video camera" as "set in motion to begin
 5 collecting video information." Id. Plaintiff's suggestion is overbroad and ambiguous. It could refer to
 6 turning power to the camera on. It could refer to actually collecting the video information. Or, it could
 7 refer to turning on a light that would instruct a technician to begin setting up the camera. Plaintiff's
 8 construction would broaden the "activate" language to cover any step toward operating the video cameras
 9 to collect video information, and makes the phrase impenetrable. Therefore, Defendants' construction
 10 should be adopted.

11 8. "no longer activate the at least one video camera" (claim 36)

12 Claim Term	Defendants' Construction	Shuffle Master's Construction
13 no longer activate the at least 14 one video camera	Instruct the video camera to stop collecting moving visual images	No construction proposed. No longer set in motion to begin 15 collecting video information. ¹⁵

16 Defendants construe "no longer activate" as "to stop." Therefore, Defendants' construction for "no
 17 longer activate the at least one video camera" is **"instruct the video camera to stop collecting moving
 18 visual images."**¹⁶ This is consistent with the use of the phrase in the context of the function served by the
 19 video camera in claim 36.

20 36. The apparatus for collecting video information relating to activities on a gaming table
 as set forth in claim 34, wherein:

21 **the circuitry is adapted to no longer activate the at least one video camera upon the
 detection by the circuitry of an absence or presence of the first change-of-state signal . . .**

22 Schuck Supp. Decl., Ex. A, '871 Patent, 12:28-34 (emphasis added).

23 If a mechanism -- such as a video camera -- is activated, it is in operation, that is, actively
 24 collecting images. In order for that to no longer be the case, the operation of the apparatus in question
 25 must be stopped. Plaintiff's proposed meaning of "no longer set in motion to begin" is overly complex

27 ¹⁵ See Brief, at 30.

28 ¹⁶ Defendants agreed during the meet and confer to modify their construction by changing
 "recording" to "collecting."

1 and ambiguous. It is unclear whether the camera is no longer being set in motion, or is stopping. That is,
 2 it is unclear whether the camera is no longer beginning to collect information, or no longer collecting
 3 information. Once a mechanism is "set" in motion, for it to be "no longer set in motion," the mechanism
 4 would have to be instructed to stop. Plaintiff's construction muddies this issue. Yet, Plaintiff insists that
 5 Defendants' straightforward construction of "no longer activate" as "to stop" is inadequate. If to "no
 6 longer activate" does not mean to "stop" recording or transmitting in claim 36, the phrase has no clearly
 7 discernible meaning. Therefore, Defendants construction should be adopted.

8 **9. "wherein the sensor is connected to the gaming table" (claim 54)**

9 Claim Term	10 Defendants' Construction	11 Shuffle Master's Construction
10 wherein the sensor is 11 connected to the gaming table	11 The sensor is fastened together or 12 joined directly to the gaming table	12 The sensor is joined or fastened to 13 the gaming table. ¹⁷

12 The proper construction of "wherein the sensor is connected to the gaming table" is "**the sensor is
13 fastened together or joined directly to the gaming table.**" This is consistent with the common
14 understanding of the phrase, as shown by dictionary definitions of "connected." See Schuck Supp. Decl.,
15 Ex. B, American Heritage Dict. ("joined or fastened together"); id., Ex. G, WordNet ("joined or linked
16 together"). Plaintiff asserts that in claim 54, "connected to the gaming table" may refer to a sensor that is
17 either "physically connected" or "operatively connected." This proposed construction is unjustifiably
18 broad, and is inconsistent with the language of the patents' claims.

19 In construing claims, the Court should presume that "separate claims are of different scope."
20 Smith & Nephew, Inc., 276 F.3d at 1310. In the '871 Patent, the term "connected" must be given a
21 narrow construction to ensure that claim 54 has a scope beyond the claim on which it depends (claim 19)
22 and the claim that follows it (claim 55). Each of these three claims addresses the relationship between the
23 sensor and the table:

24 19. An apparatus for collecting video information relating to activities on a gaming table,
25 the apparatus comprising:
26 a **sensor disposed in proximity to the gaming table**, the sensor being adapted to sense an
27 occurrence of an event on a surface of the gaming table and to output a change-of-state
28 signal; . . .

¹⁷ See Brief, at 31-32.

1 54. The apparatus for collecting video information relating to gaming activities as set forth
 2 in claim 19, **wherein the sensor is connected to the gaming table.**

3 55. The apparatus for collecting video information relating to gaming activities as set forth
 4 in claim 19, **wherein the sensor is disposed in proximity to but does not contact the**
5 gaming table.

6 Schuck Supp. Decl., Ex. A, '871 Patent, 10:55-60, 15:29-35 (emphasis added). In claim 19, the
 7 patentee required that the sensor be "in proximity to" the gaming table. Id., 10:55-57. Claim 54, a claim
 8 dependent on claim 19, then discloses a sensor "connected to the gaming table." Id., 15:29-31. Thus, in
 9 claim 54, the sensor must be more than in proximity.

10 Claim 55 provides further guidance. Claim 55, also dependent on claim 19 describes a sensor
 11 which, though located in proximity to the gaming table, "does not contact the gaming table." Id., 15:34-
 12 35. Plaintiff seeks to construe claim 54 as allowing "a physical or operative connection." Brief, at 33
 13 (emphasis added). This broad definition would allow the sensor to be in proximity to the gaming table
 14 without actually touching the table. That is, the meaning would make the claim indistinguishable from
 15 claim 19, which calls for proximity with or without contact between table and sensor. Such a construction
 16 would remove any meaning from the word "connect" and is contrary to the doctrine of claim
 17 differentiation. In construing claims, the Court should presume that "separate claims are of different
 18 scope." Smith & Nephew, Inc., 276 F.3d at 1310. To read claim 54 as covering indirect connection to a
 19 gaming table would leave claim 54 covering the same scope as claim 19. This is improper. Id.

20 Plaintiff argues that "directly" should not be included in the construction of "connected to." See
 21 Brief, at 32. However, the case law cited by Plaintiff is inapposite. Plaintiff cites a district court case,
 22 Sulfur-Tech Water Systems, Inc. v. Kohlenberg, 162 F. Supp. 2d 743, 749 (N.D. Ohio 2001) for the
 23 proposition that "connected to" does not require direct contact, or even proximity.¹⁸ However, in Sulfur-
24 Tech, the patent text did not specify proximity between the "connected" elements. Id. at 747. Here, the
 25 patent claim already expressly sets forth (via incorporation of claim 19) that the "sensor" must be "in
 26 proximity to the gaming table." Schuck Supp. Decl., Ex. A, '871 Patent, 10:55-57, 15:29-30.

27

 28 ¹⁸ The other cases cited by Plaintiff address construction of the phrases "secured to" and "secured
 across" rather than the appropriate phrase from claim 54, "connected to." Therefore, they are not
 relevant.

1 While citing Sulfur-Tech, Plaintiff fails to cite the relevant Federal Circuit case on which the
 2 Sulfur-Tech court relied, Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir.
 3 1996). In Ethicon, "connected to" was interpreted to mean "proximate, or in direct contact with." See
 4 Sulfur-Tech Water Systems, Inc., 162 F. Supp. 2d at 747.¹⁹ The Federal Circuit rejected the patent
 5 holder's argument that "connected to" could "be read broadly to include two distant elements which are
 6 'connected' by intervening elements." Ethicon, 93 F.3d at 1578. The Federal Circuit stated: "If, as [the
 7 plaintiff] argues, 'connected to' should be read broadly to include elements which are connected directly or
 8 indirectly, then this language would read on a lockout mechanism located anywhere in the surgical stapler,
 9 and the 'connected to' limitation would be meaninglessly empty." Id.

10 Here, the claim language also requires proximity, and the logic of Ethicon is applicable. In order
 11 to give all terms in each of the '871 Patent's claims meaning, Defendants' construction should be adopted.

12 **10. "transparent barrier" and "transparent front wall" (claims 13-18, 40, 41, 53)²⁰**

13 Claim Term	14 Defendants' Construction	15 Shuffle Master's Construction
16 transparent barrier/ transparent front wall	A barrier or wall capable of transmitting light so that objects or images can be seen through it with clarity	A barrier or wall capable of transmitting light so that objects or images can be seen through it, by a human or an imager with clarity. ²¹

17 Defendants appropriately construe "transparent barrier" or "transparent front wall" as "**a barrier**
 18 **or wall capable of transmitting light so that objects or images can be seen through it with clarity.**"

19 Defendants' proposed definitions of these terms are based on the plain meaning of the words. Here, the
 20 plain meaning of "transparent" is "capable of transmitting light so that objects can be seen through it with
 21 clarity." See Schuck Supp. Decl., Ex. G, WordNet ("transmitting light; able to be seen through with
 22 clarity").

23 ¹⁹ Inasmuch as claim 19 already requires that the "sensor" be located "in proximity to" the
 24 gaming table, and that Plaintiff disputes Defendants' inclusion of the word "directly" in their
 25 construction, the failure to address Ethicon is particularly egregious.

26 ²⁰ In its brief, Plaintiff erroneously states that the phrase "transparent barrier" appears in claim
 27 63. See Brief, at 35. Additionally, Plaintiff omits claim 40, containing the phrase "transparent front
 28 wall," from its list. Id.

²¹ Brief, at 35.

1 clarity"); id., Ex. D, New Oxford American Dictionary, 2001, at 1800 ("(of a material or article) allowing
 2 light to pass through so that the objects behind can be distinctly seen"); id., Ex. H, American Heritage
 3 College Dictionary, 4th ed., Houghton Mifflin Co., 2002, at 1461 ("Capable of transmitting light so that
 4 objects or images can be seen as if there were no intervening material.")

5 The only difference between Defendants' proposed construction and that offered by Plaintiff is that
 6 Plaintiff adds the language "by a human **or an imager**" that is not supported by the patent. See Brief, at
 7 35-36. This added language departs from the plain meaning and is therefore improper.

8 Plaintiff's proposed construction is inappropriate because it utilizes the term "imager" -- a term that
 9 is never used in the '871 Patent. This baseless attempt to insert a new term is significant because it also
 10 represents a back door attempt to redefine "video camera" in an overly broad manner. The term "imager"
 11 is a far broader concept than a video camera, and might include devices in addition to the video cameras
 12 claimed in the '871 Patent. For example, an imager could be an infrared sensor that "sees" through walls,
 13 or it could be an X-ray device capable of "seeing" through non-transparent materials. There is no reason
 14 to read the '871 Patent so broadly as to cover imagers that are not video cameras. Likewise, there is no
 15 reason to construe the '871 Patent's transparent barrier as being transparent to "imagers," as opposed to the
 16 human eye.

17 If the patentee had wanted to design a barrier capable of transmitting light sufficiently to be "seen
 18 through" by an undefined "imager" and not by a human, he should have mentioned an "imager" in his
 19 specification and claims. The patentee here did not do so. In fact, the word imager never appears in the
 20 '871 patent or its prosecution history. Plaintiff tries to bolster its own patent claims by importing language
 21 from Defendants' patents to show what Plaintiff must have meant when he drafted his claims. See Brief,
 22 at 36-37. This is clearly improper, as unrelated patents are not to be used in construing one another. See
 23 Texas Digital Sys., 308 F.3d at 1211 (explaining that an unrelated patent "sheds no light" on claim term).
 24 A claim term should be given its ordinary meaning unless a different meaning is indicated. See CCS
 25 Fitness, 288 F.3d at 1366; Bell Atlantic Network Services, Inc., 262 F.3d at 1268.

26 Plaintiff argues that "the ability of a human to see through the barrier would not serve any function
 27 or purpose related to the invention," and therefore Defendants' construction should be rejected. See Brief,
 28 at 36. This assertion is based on a false premise--the premise that the video camera is something other

than an ordinary video camera. But as explained above, that is not the case. A barrier transparent to the human eye would also be transparent to a video camera. Hence, the ordinary meaning of "transparent" would serve the "function" and "purpose" of the invention. When the words of a patent are clear, the fact that the clear meaning leads to a result is not sufficient to justify rewriting the claim.²² See Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("in accord with our settled practice we construe the claim as written, not as the patentees wish they had written it."). Accordingly, Defendants' proposed construction should be adopted.

11. "frame" (claims 39, 40, 42, 67, 68)

Claim Term	Defendants' Construction	Shuffle Master's Construction
frame	An open structure or rim for encasing or holding	A supporting structure or framework designed to shape or support. ²³

Defendants propose that the proper construction of frame, as it is used in the context of claims 39, 40, 42, 67 and 68 is: "**an open structure or rim for encasing or holding.**"²⁴ The term "frame" is first used in this sense in claim 39 of the '871 Patent:

39. A video camera assembly for use on a gaming table, the video camera assembly comprising:
 a **frame** adapted to be coupled to a gaming table and to support a chip tray, wherein the **frame** comprises a length and a width which correspond in dimension to a length and a width of the chip tray; and
 a plurality of video cameras secured to the **frame**, each of the plurality of video cameras being adapted to be focused on an individual bet position on the gaming table.

Schuck Supp. Decl., Ex. A, '871 Patent, 12:55-64 (emphasis added).

Defendants' construction of the frame as "an open structure or rim for encasing or holding" is

²² Even if a barrier allowing humans to see through it might not serve the function intended by the patentee, this is not an error to be corrected by the Court. Courts may not redraft claims to make them operable or to sustain their validity. See Chef America, Inc., 358 F.3d at 1374 ("This court, however, repeatedly and consistently has recognized that courts may not redraft claims, whether to make them operable or to sustain their validity."); see also, e.g., Allen Eng'g. Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1349 (Fed. Cir. 2002); Elekta Instrument S.A. v. O.U.R. Scientific Int'l., Inc., 214 F.3d 1302, 1308-09 (Fed. Cir. 2000); Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999).

²³ Brief, at 39.

²⁴ The '871 Patent sometimes uses the term "frame" to refer to a single image, but in the listed claims the term refers to a physical structure.

1 consistent with the plain meaning of the term and the description of the frame in the '871 Patent. This
 2 plain meaning is well-understood. See id., Ex. B, American Heritage Dict. ("[a]n open structure or rim
 3 for encasing, holding, or bordering"); Ex. E, Webster's New Collegiate Dictionary, at 452 ("an open case
 4 or structure made for admitting, enclosing, or supporting something").

5 The '871 Patent explains that the frame holds the chip tray: "The frame 24 is sized and constructed
 6 to accommodate the chip tray thereupon and to provide a chamber therein for placement of one or more
 7 video cameras." Id., Ex. A, '871 Patent, 3:24-28; Figure 1.

8 In addition, the frame in the '871 Patent is an open structure. In claim 40, the '871 Patent discloses
 9 that the frame comprises "two side walls, a back wall and a transparent front wall." Id., 13:1-2. The
 10 specification provides a more detailed description:

11 the frame comprises a left wall 29, a right wall 31, a back wall 33, and a transparent wall
 12 35 extending between the left wall 29 and the right wall 31. The chip tray 20 is shown
 13 raised above the frame in FIG. 1 for illustrative purposes. In the illustrated embodiment,
 the frame 24 elevates the chip tray 20 about 2 cm above the upper surface to accommodate
 the seven video cameras 27.

14 '871 Patent, 3:38-44 & Fig. 1.

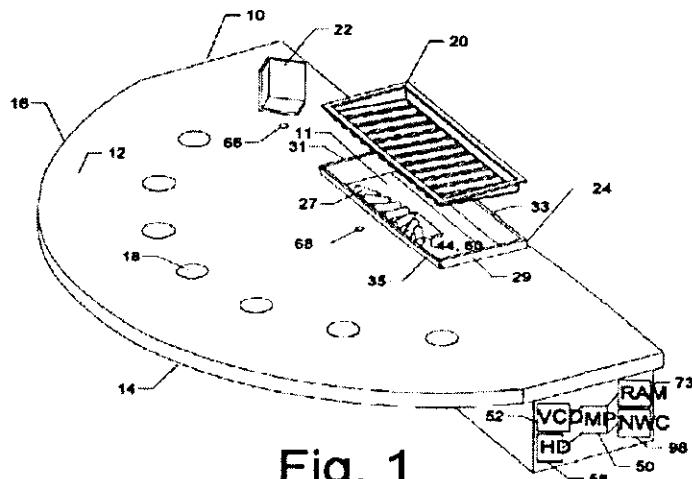


Fig. 1

25 The patent never discloses the frame as being closed with either a top or bottom surface. This description
 26 is consistent with the ordinary meaning of frame and with Defendants' proposed construction of the frame
 27 as an **open structure** or rim, which is in turn consistent with the appearance of the "frame" in Figure 1.

28 Plaintiff proposes that the Court construe "frame" as a "supporting structure or framework

1 designed to shape or support." See Brief, at 39. This construction omits the feature that the frame is an
 2 **open structure** by definition and in the '871 Patent. Under Plaintiff's proposed construction, a "frame"
 3 could be any structure -- for example, a pedestal, a dais, a set or legs or a box. None of these structures
 4 correspond with the ordinary meaning of "frame." Accordingly, Defendants' "open structure or rim"
 5 limitation is needed to give "frame" its ordinary meaning.

6 Moreover, Plaintiff's construction ignores the fact that the frame in the '871 Patent does not shape
 7 anything. See Chip Tray 20 in Fig. 1, '871 Patent, supra. While the frame does support a chip tray in
 8 some claims, the chip tray has shape and size independent of the frame. The frame does not give **shape** to
 9 the chip tray. If anything, the chip tray dictates the shape of the frame in the '871 patent. The frame is
 10 designed to have "a length and a width which correspond in dimension to a length and width of the chip
 11 tray." Schuck Supp. Decl., Ex. A, '871 Patent, 12:58-60; see also id., 3:22-27. Defendants' construction
 12 of "frame" should therefore be adopted.

13 **12. " a plurality of video cameras secured to the frame" (claim 39)**

Claim Term	Defendants' Construction	Shuffle Master's Construction
a plurality of video cameras secured to the frame	The video cameras are firmly fastened or attached directly to the frame.	The video cameras are fastened to the frame. ²⁵

17 The phrase "a plurality of video cameras secured to the frame" appears in claim 39 of the '871
 18 Patent:

19 39. A video camera assembly for use on a gaming table, the video camera assembly
 20 comprising:
 21 a frame adapted to be coupled to a gaming table and to support a chip tray, wherein the
 22 frame comprises a length and a width which correspond in dimension to a length and a
 23 width of the chip tray; and
 24 **a plurality of video cameras secured to the frame**, each of the plurality of video cameras
 25 being adapted to be focused on an individual bet position on the gaming table.

26 Schuck Supp. Decl., Ex. A, '871 Patent, 12:55-64 (emphasis added).

27 The phrase "a plurality of video cameras secured to the frame" in claim 39 means "**the video**
 28 **cameras are firmly fastened or attached directly to the frame.**" The focus of the parties' dispute is on
 the meaning of "secured" in this phrase. The term "secured" appears nowhere else in the '871 Patent or it

²⁵ Brief, at 40.

prosecution history other than in claim 39. Therefore, the term must be given its meaning as it would be commonly understood by a person of ordinary skill in the art in its context. Defendants' definition of "secured" as meaning "firmly fastened or attached directly" is consistent with the standard dictionary definition of "secure." See Schuck Supp. Decl., Ex. B, American Heritage Dict. ("firmly fastened"; "to make firm or tight; fasten"); id., Ex. G, WordNet ("cause to be firmly attached").

Defendants' definition is also consistent with the term's use in the '871 Patent. In claim 39, a "plurality of video cameras" are "secured" or firmly fastened to the frame. Schuck Supp. Decl., Ex. A, '871 Patent, 12:61-64. This is important because the cameras must be in the proper locations so that they each be aligned with "an individual bet position on the gaming table." Id., 12:63-64. The cameras must be firmly fastened in such a way that they provide a steady and consistent view of the areas of the table that each is responsible for capturing. That is their function in the patent. In this light, "secured" is properly understood to mean "firmly fastened or attached directly" rather than merely "fastened."

Plaintiff's proposed construction is an attempt to remove the requirement that the cameras be firmly fastened to the frame; it is an attempt to have claim 39 read more broadly to improperly cover systems that include cameras not directly attached to the frame. Plaintiff's objective is apparent when looking at the cases cited by plaintiffs, which stand for the proposition that intervening apparatuses can stand between the two objects being fastened together. See Brief, at 32-33. Plaintiff would have this Court define "secured to the frame" so expansively that it could read on any cameras fastened to any intervening device, which at some level of abstraction, in turn, is fastened to a frame mounted on a gaming table, rather than requiring the cameras themselves mounted to the frame. This is not proper, as it is inconsistent with the way the term is used in the context of claim 39.

C. Indefinite Claim Terms or Phrases in the '871 Patent

A patent's claims must be clearly set forth in such a manner as to be understood by one of ordinary skill in the relevant art. See Miles Laboratories, Inc. v. Shandon Inc., 997 F.2d 870, 874-75 (Fed. Cir. 1993) ("Claims must have a clear and definite meaning when construed in light of the complete patent document."). In determining whether a claim is indefinite under 35 U.S.C. § 112, the correct inquiry is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. Id. at 875. Further, claims must be "sufficiently precise to permit a potential competitor to

1 determine whether or not he is infringing." Morton Int'l, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470
 2 (Fed. Cir. 1993).

3 Where the written description renders a claim indefinite, that finding should be rendered at the
 4 time of claim construction. See Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1342 (Fed.
 5 Cir. 2003) (finding that the district court was faced with a conundrum regarding claim construction and
 6 that the "conundrum" should have ended the inquiry, for such ambiguity in claim scope is at the heart of
 7 the definiteness requirement"); S3 Inc. v. NVIDIA Corp., 259 F.3d 1364, 1367 (Fed. Cir. 2001) ("The
 8 question of whether the claims meet the statutory requirements of § 112 ¶ 2 is a matter of construction of
 9 the claims"); Atmel Corp. v. Information Storage Devices, 198 F.3d 1374, 1379 (Fed. Cir. 1999). Here,
 10 the '871 Patent contains numerous claims which are indefinite, and the Court should rule accordingly.²⁶

11 1. **"lower surface" (claim 1)**

12 The term "lower surface" in claim 1 of the '871 renders the claim indefinite because although the
 13 position of the "lower surface" is central to the claim, there is no indication of where the lower surface is
 14 actually located. Claim 1 only describes the "lower surface" once:

15 1. An apparatus for collecting video information relating to gaming activities, the
 16 apparatus comprising:
 17 a gaming table having an upper surface, **a lower surface** and a perimeter surrounding the
 18 upper surface of the gaming table, the upper surface lying a plane which is substantially
 19 parallel to a support surface upon which the gaming table rests, . . .

20 Schuck Supp. Decl, Ex. A, '871 Patent, 9:11-15 (emphasis added). While the upper surface is discussed
 21 extensively, there is no description of how the lower surface is positioned or where it is located. The
 22 lower surface could be anywhere below the upper surface or at the table's base. But the location of the
 23 lower surface is central to the next element of the claim:

24 at least **one video camera disposed** in the volume of space above the upper surface or
 25 **below the lower surface**, the at least one video camera being adopted to collected video
 26 information pertaining to gaming activities being conducted on the upper surface of the
 27 table;

28 Id., 9:28-33 (emphasis added). Thus, the location of the camera is at least in part dependent on the

26 Defendants reserve their right to bring a motion for summary judgment on the grounds of
 27 invalidity under § 112 ¶ 2, after claim construction. See Creo Prods., Inc. v. Presstek, Inc., 305 F.3d
 28 1337, 1346 (Fed. Cir. 2002) (noting that the party had preserved its indefiniteness arguments during the
 claim construction proceedings).

1 location of the lower surface -- without any indication of where the lower surface is located. Given that a
 2 video camera located below the lower surface must be capable of viewing activities on the **upper** surface,
 3 id. and the manner of doing so is not obvious, further explanation is necessary to enable one of ordinary
 4 skill practice the claim. See Miles Laboratories, Inc., 997 F.2d at 870. Additionally, the claim language
 5 setting forth the lower surface does not provide enough information to permit a potential competitor to
 6 determine whether or not he is infringing. See Morton Int'l., 5 F.3d at 1470. Accordingly, the claim is
 7 indefinite.

8 2. **"wherein a plurality of lines can be defined along the perimeter of the gaming**
 9 **table, each of the plurality of lines being defined to extend normally to the**
 10 **upper surface and to intersect the perimeter at a different point along the**
 11 **perimeter, the plurality of lines defining a surrounding wall of a volume of**
 space above the upper surface, wherein the volume of space extends upwardly
 and normally above the upper surface, and wherein the volume of space is
 defined within the surrounding wall;" (claim 1)

12 Claim 1 of the '871 Patent is indefinite, because it includes the impenetrable language set forth
 13 above. The language quoted above is ambiguous for a number of reasons, most of which become clear
 14 upon reading and rereading the phrase. Defendants below set forth just some of the significant difficulties
 15 in construing the above language.

16 While "a plurality of lines" clearly refers to more than one line, it is not clear how they are defined,
 17 or exactly what space they define. Claim 1 goes on to say that those plurality of lines are "defined to
 18 extend normally to the upper surface of the gaming table at a different point along the perimeter." Schuck
 19 Supp. Decl., Ex. A, '871 Patent, 9:20-22. There are several problems with this phrase.

20 First, there is nothing in the text of the claim or in the specification of the '871 Patent to suggest
 21 what "extend normally to the upper surface" means. While the meaning of "upper surface" can be
 22 adequately determined by looking at the patent text, "extend normally to the upper surface," given its
 23 ordinary meaning, begs the question of where the lines are extending **from** if they are extending normally
 24 **to** the upper surface. In other words, the lines terminate at the upper surface, but where do they originate?
 25 Even assuming, *arguendo*, that Plaintiff correctly asserts that "normally to" is commonly understood to
 26 mean that these lines run perpendicular to the upper surface of the table (See Brief, at 42), and intersect
 27 the perimeter, it remains unclear where the lines terminate, assuming that one end of them lies at some
 28 undisclosed point where the upper surface of the table meets the perimeter of the table. Second, it is

1 unclear how many lines are being disclosed as intersecting the upper surface. Third, it is unclear in what
 2 way each of the "plurality of lines" intersect the perimeter at "a different point."

3 Even if one reading the patent successfully navigates past the above language disclosing the
 4 plurality of lines, he must contend with the following language:

5 the plurality of lines defining a surrounding wall of a volume of space above the upper
 6 surface, wherein the volume of space extends upwardly and normally above the upper
 surface, and wherein the volume of space is defined within the surrounding wall.

7 Schuck Supp. Decl., Ex. A, '871 Patent, 9:21-26. This phrase suffers from some of the same problems as
 8 the phrase described above. If the volume of space begins on the surface of the table, where does it end?

9 Also, the patent language itself seems to be confusingly recursive. The plurality of lines "defin[e] a
 10 surrounding wall of a volume of space," the volume of space being "defined within the surrounding wall."

11 The nature of the thing being defined here is simply not clear.

12 The only mention of the "plurality of lines" in the patent specification appears in the summary of
 13 invention section, as follows:

14 When a plurality of lines are defined along the perimeter of the gaming table, each of the
 15 plurality of lines being defined to extend normally to the upper surface and to intersect the
 16 perimeter at a different point along the perimeter, the plurality of lines defines a
 17 surrounding wall of a volume of space above the upper surface, wherein the volume of
 18 space extends upwardly and normally above the upper surface, and wherein the volume of
 19 space is defined within the surrounding wall.

20 Id., 1:56-64. This single section of the specification is not helpful in defining or explaining the claim.
 21 Therefore, the terms remain ambiguous and undefined, making it impossible to define the "volume of
 22 space" claim 1 purports to disclose.

23 The position of the at least one video camera is central to claim 1 and many other of the '871
 24 Patent's claims. These video cameras are said to be "disposed in the volume of space" which claim 1
 25 inadequately discloses. The quoted claim language does not adequately disclose the "volume of space" in
 26 which the cameras are to be located. Furthermore, the specification is not helpful in clarifying the
 27 inherent ambiguity of the claim's language. Accordingly, claim 1 is rendered indefinite.

28 3. **"wherein the at least one video camera comprises a line-of-sight, which
 comprises an axis of the video camera defined between a focal point on a lens
 of the video camera and a focal point on a target at which the video camera is
 aimed," (claim 1)**

29 Claim 1 of the '871 contains language purporting to define a line-of-sight for a video camera.

1 1. An apparatus for collecting video information relating to gaming activities, the apparatus
 2 comprising: . . .

3 **at least one video camera** disposed in the volume of space **above the upper surface or**
 4 **below the lower surface**, the at least one video camera being adapted to collect video
 5 information pertaining to gaming activities being conducted on the upper surface of the
 6 gaming table;

7 **wherein the at least one video camera comprises a line-of-sight, which comprises an**
 8 **axis of the video camera defined between a focal point on a lens of the video camera**
 9 **and a focal point on a target at which the video camera is aimed . . .**

10 Schuck Supp. Decl., Ex. A, '871 Patent, 9:11-12, 27-37 (emphasis added). The claim fails to set forth
 11 how a line-of-sight can be determined between a point on a lens of the video camera and a point on a
 12 target when the camera is located "below the lower surface [of a gaming table]". Id., 9:28-29.

13 In instances where a camera is located "below the lower surface" of the table, the '871 Patent
 14 specification discloses pointing the camera at a mirror or prism. Id., 3:59-63. The mirror or prism in turn
 15 has a line-of-sight with the target. However, that use of a mirror or prism creates a second line-of-sight.
 16 There is a first axis between the camera lens and the mirror or prism, and a second axis between the
 17 mirror or prism and the target. There is no single "axis" in that case between a lens and the target.

18 The specification does not provide any more detail establishing a single line of sight between a
 19 video camera and a target for video cameras situated below the lower surface of the table.

20 The connecting tubes 99, between the camera lenses and the 90.degree. prisms or mirrors
 21 of the mounts shown in FIGS. 5 and 7, elevate the video cameras' lines-of-sight only
 22 slightly above the surface 12 of the gaming table 10.

23 Id., 4:11-15. The video camera's line of sight is defined in claim 1 as being between a focal point on a
 24 lens and the target. As shown in Figures 5 and 7, and described above, a video camera situated below the
 25 lower surface does not have a line of sight with the target. In fact, the camera is focused at a ninety degree
 26 angle to the target, requiring a mirror or prism to reflect light onto the lens. Id. Therefore, it is impossible
 27 for there to be any single line of sight "between a focal point on a lens and a focal point on the target."
 28 The language, therefore, renders claim 1 indefinite.

29 4. The angle between "line of sight" and the upper surface (claims 1, 3 and 4)

30 Claims 1, 3 and 4 all contain language regarding the angle between the line of sight of the video
 31 camera and the table surface.

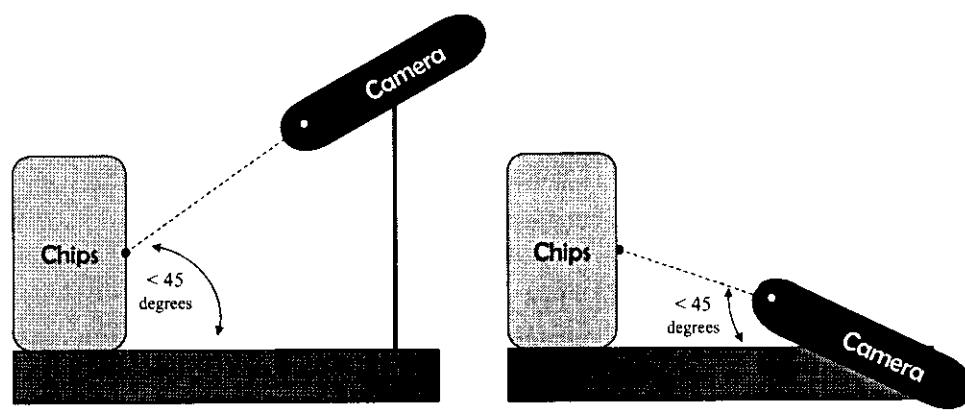
32 [claim 1] . . . wherein the at least one video camera comprises a line-of-sight, which
 33 comprises an axis of the video camera defined between a focal point on a lens of the video
 34 camera and a focal point on a target at which the video camera is aimed, the video camera
 35 being positioned of the gaming table so that **the line-of-sight of the video camera forms**

1 an angle with the plane of the upper surface that is less than about 45 degrees.

2 3. The apparatus for collecting video information relating to gaming activities as set forth
3 in claim 1, wherein the at least one video camera is positioned to have a line of sight of
3 less than about 10 degrees with the plane of the upper surface.

4 4. The apparatus for collecting video information relating to gaming activities as set forth
5 in claim 1, wherein the at least one video camera is positioned to have a line of sight of
5 less than about 5 degrees with the plane of the upper surface.

6 Schuck Supp. Decl., Ex. A, '871 Patent, 9:33-40; 9:45-54 (emphasis added). Thus, each of the claims
7 discloses a line of sight that forms an angle with the plane of the upper surface of the gaming table that is
8 within a certain range. The claims are indefinite, however, because they fail to identify which angle is
9 less than 45, 10 or 5 degrees. This is most clearly illustrated in the following diagram:



19
20 As demonstrated above, the referenced claim does not make clear whether the defined angle is the
21 angle found at the target end of the line of sight or the camera end of the line of sight. A claim is
22 indefinite if it is "insolubly ambiguous, and no narrowing construction can properly be adopted."
23 Honeywell Inter'l, Inc. v. Inter'l Trade Comm., 341 F.3d 1332, 1338-1339 (Fed. Cir. 2003) (quoting
24 Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Claims 1, 3 and 4
25 are "insolubly ambiguous" here because there is nothing in the claim to indicate which angle, of two
26 possibilities, must be less than the specified number of degrees. Nothing in the specification clarifies the
27 ambiguity nor does a figure provide any guidance. Thus, a narrowing construction cannot properly be
28 adopted.

1 A finding of indefiniteness is particularly appropriate here because camera placement is at the
2 heart of the disputed claims. Two of the three clauses of claim 1 address camera placement and
3 alignment, while the additional limitations set forth in dependent claims 3 and 4 concern camera
4 positioning. See Schuck Supp. Decl., Ex. A, '871 Patent 9:11-40; 9:45-54. As the figures above suggest,
5 determination of which angle is addressed by the claims is necessary to determine where the video camera
6 should be in relation to the target: if the angle is on the target side, the camera would be higher than the
7 target; if the angle is formed on the camera side, the camera would be placed lower than the target. This
8 confusion is amplified by the rest of the patent which indicates that the camera(s) can be placed "below
9 the lower surface," id., at 9:28, or "suspended or mounted from the ceiling," id., at 4:28-29. Thus, the
10 claims purport to disclose an apparatus with specified camera placement but provide no clear guidance on
11 where the cameras should be located.

12 Notably, Plaintiff does not disagree that the specific angle is ambiguous. See Brief, at 44. Instead
13 Shuffle Master argues that the "claim only requires a measurement the angle [sic] of the lines" and that
14 "[t]he location of the vertice is irrelevant." Id. But, as explained above, the location of the vertice
15 determines camera placement and is, therefore, critical. If, in claim 1, the video camera could be
16 positioned so that **either** angle could be less than about 45 degrees, the camera could be placed virtually
17 anywhere, rendering the claim largely meaningless. The ambiguity regarding the specified angle
18 eliminates guidance regarding video camera positioning. Thus, under Plaintiff's argument, the claim
19 language (and entirety of the additional language claims 3 and 4) would be meaningless -- this cannot be
20 so. These claims are truly indefinite.

5. "the glass barrier" (claims 14, 15, 53)²⁷

Claim Term	Defendants' Construction	Shuffle Master's Construction
the glass barrier	The term "the glass barrier" in claims 14, 15 and 53 is indefinite as having no antecedent basis; alternatively, the transparent barrier referenced in those claims is constructed of glass.	A transparent barrier or transparent front wall [as previously defined] that is constructed of glass. ²⁸

In claims 14 and 15 of the '871 Patent, the term "the glass barrier" is indefinite and cannot be construed because it lacks an antecedent basis. Claims 14 and 15 read:

14. The apparatus for collecting video information relating to gaming activities as set forth in claim 13, wherein the transparent barrier comprises a planar surface that is oriented to eliminate a possibility of a player at the gaming table seeing an underside of a card in a reflection of **the glass barrier**.

15. The apparatus for collecting video information relating to gaming activities as set forth in claim 13, wherein the transparent barrier comprises a surface that is covered with a non-reflective film to eliminate a possibility of a player sitting at the gaming table seeing an underside of a card in a reflection of **the glass barrier**.

Schuck Supp. Decl., Ex. A, '871 Patent, 10:30-41 (emphasis added). In patent claim drafting, the word "the" indicates that the specific claim term, in this case "glass barrier," has been introduced previously. See Manual of Patent Examining Proc. ("MPEP") § 2173.05(e), Lack of Antecedent Basis (8th ed. 2001). A claim is indefinite when it contains words that lack antecedent basis. See Intel Corp. v. Broadcom Corp., 172 F. Supp. 2d 478, 485 (D. Del. 2001); see also MPEP § 2173.05(e).

In claims 14 and 15, the term "glass barrier" is preceded by the word "the." The use of this definite article mandates that the term "glass barrier" has been previously used in the patent claims. Claims 14 and 15 both depend upon claim 13. Claim 13, in turn, depends upon claim 5, which depends upon claim 4, which depends upon claim 1. The term "the glass barrier" does not appear in any of these claims -- claims 1, 4, 5 or 13. Indeed, glass barrier does not appear in any claims prior to claims 14 and 15. The term "the glass barrier" also appears in claim 53 without antecedent:

53. The apparatus for collecting video information relating to gaming activities as set forth in claim 13, wherein the transparent barrier comprises a curved surface that is oriented to

²⁷ Defendants assert that the term "the glass barrier" is indefinite for lack of antecedent basis in claims 14, 15 and 53. Claim 41 is not at issue.

²⁸ Brief, at 37.

1 eliminate a possibility of a player at the gaming table seeing an underside of a card in a
 2 reflection of the glass barrier.

3 Schuck Supp. Decl., Ex. A, '871 Patent, 15:23-28 (emphasis added). Like claims 14 and 15, claim 51
 4 depends upon claim 13; as detailed above, none of the claims in that line of claims provides an antecedent
 5 basis for "the glass barrier."

6 Plaintiff argues that language in claim 41 provides antecedent basis for "the glass barrier" in
 7 claims 14, 15, and 53.²⁹ It does not. Claims 14 and 15 precede claim 41 and are not associated with claim
 8 41. Similarly, although claim 53 follows claim 41, claim 53 is dependent on claim 13 and is not related to
 9 claim 41. Logic dictates that an antecedent appear in the claim, or a claim upon which the claim depends.
 10 See Astra Aktiebolag v. Andrx Pharmaceuticals, Inc., 222 F. Supp. 2d 423, 447 (S.D.N.Y. 2002).

11 Otherwise, nearly anything could be an antecedent.

12 Alternatively, if "the glass barrier" of claims 13, 14 and 53 has an antecedent, it must be the
 13 "transparent barrier" of claim 13. See Schuck Supp. Decl., Ex. A, '871 Patent, 10:29. If that is the case,
 14 then the modifier "glass" must be inherent in claim 13's "transparent barrier." Consequently, if claims 14,
 15 15 and 53 are not indefinite (and Defendants believe they are), then "transparent barrier" in claim 13 and
 16 its dependent claims must be construed to mean a "transparent barrier of glass."

17 6. **"[t]he apparatus for collecting video information relating to activities on a
 18 gaming table as set forth in claim 45 . . ." (claim 47, 48, 49, 50)**

19 Claim 47 of the '871 Patent refers to "[t]he apparatus for collecting video information relating to
 20 activities on a gaming table as set forth in claim 45." Schuck Supp. Decl., Ex. A, '871 Patent, 14:42-43.
 21 There is no apparatus disclosed in claim 45, as claim 45 is a method claim. Id., 14:12-29. Therefore,
 22 claim 47 is indefinite. In addition, claim 48 is dependent upon claim 47, claim 49 is dependent on claim
 23 48, and claim 50 is dependent on claim 49. Each claims "[t]he apparatus" and each is dependent upon

24 ²⁹ Claim 41 reads:

25 41. The video camera assembly as set forth in claim 40, wherein:
 26 the transparent front wall comprises a plane of tinted glass; and
 27 the plane of tinted glass forms an angle of about 15 degrees with a line perpendicular to
 28 the upper surface of the gaming table;
 29 wherein the transparent barrier comprises a planar surface that is oriented to eliminate a
 30 possibility of a player sitting at the gaming table seeing an underside of a card in a
 31 reflection of the glass barrier.

Schuck Supp. Decl., Ex. A, '871 Patent, 13:5-15 (emphasis added).

1 claim 45 via claim 47. Thus, claims 48, 49 and 50 are also indefinite.

2 Plaintiff asks this Court to redraft the claim to make it valid by correcting a purported
 3 typographical error. See Brief, at 45. Courts may not redraft claims, whether to make them operable or to
 4 sustain their validity. See Chef America, Inc. v. Lamb Weston, Inc., 358 F.3d 1371 (Fed. Cir. 2004).
 5 Plaintiff claims that the Court may correct the error in this case, because it is a drafting error. The Federal
 6 Circuit has held that a Court may correct a purported typographical error in claim construction only where
 7 the intended meaning is clear, and no contrary construction is evident from the prosecution history.

8 Correction is permissible only where:

9 (1) the correction is not subject to reasonable debate based on consideration of the claim
 10 language and specification and (2) the prosecution history does not suggest a different
 interpretation of the claims.

11 Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1354 (Fed. Cir. 2003). Correction is only
 12 allowed where the error is "apparent from the face of the patent." Id., at 1357. Here, the intended meaning
 13 of the claim in question is not apparent from the face of the patent, and there is reasonable debate about
 14 the appropriate correction.

15 The claim could be properly referring to one of the apparatus claims listed previously, such as
 16 claim 19, which properly discloses an "apparatus for collecting video information relating to activities on
 17 a gaming table." Alternatively, although the patentee used the term "apparatus" in the original application
 18 as well as the patent (See Schuck Supp. Decl., Ex. I, '871 Patent Prosecution History, at SM-MP 000814-
 19 000815; id., Ex. A, '871 Patent, 14:42-15:10), he may have indeed meant to disclose a "method." Neither
 20 of these corrections is clearly more correct than the other. Therefore, it is improper for the Court to
 21 correct in this instance. See Novo Indus., L.P., 350 F.3d at 1357.

22 This result is not unduly harsh. The Federal Circuit has previously observed that "it does not seem
 23 to us to be asking too much to expect a patentee to check a patent when it is issued in order to determine
 24 whether it contains any errors that require the issuance of a certificate of correction." Southwest Software,
 25 Inc. v. Harlequin Inc., 226 F.3d 1280, 1296 (Fed. Cir. 2000). Claims 47, 48, 49 and 50 of the '871 Patent
 26 should be deemed indefinite.

1 **III. CONSTRUCTION OF THE '647 PATENT**

2 **A. Summary of the '647 Patent and its Prosecution History**

3 The '647 Patent -- issued to Glenn Fishbine and Jack Klingert -- is titled "Gambling Chip
 4 Recognition System." The '647 Patent discloses use of an imager and a frame digitizer to capture images
 5 of chips on a gaming table, which are then analyzed to determine the quantity of chips being wagered.
 6 The '647 Patent employs a method of identifying the edges of individual gambling chips to determine how
 7 many chips a player is wagering.

8 The '647 Patent matured from United States Patent Application Number 962,915 ("the '915
 9 Application"), filed on October 27, 1997. See Schuck Supp. Decl., Ex. J, '647 Patent. The '915
 10 Application was a continuation of U.S. Pat. Appl. No. 539,779 ("the '779 Application"), filed on October
 11 5, 1995. As originally submitted, the '779 Application claimed reading information about the
 12 circumference of gambling chips to determine the quantity and value of the chips. All claims of the '779
 13 Application were rejected by the examiner as obvious under 35 U.S.C. § 103 on October 19, 1996:

14 The use of the image analysis of Merton in the gaming systems cited (Storch, Fisher, for
 15 example) would have been obvious to one of ordinary skill in the art at the time the
 16 invention was made for chip processing under the rationale of interchangeable teaching of
 17 similar systems.

18 *Id.*, Ex. K, '647 Patent Prosecution History ("'647 Pros. Hist."), at SM-MP 000903-000905.

19 The prior art referenced by the patent examiner in his rejection disclosed chip recognition systems that
 20 used special marks or codes. For example, the Storch patent summarized its invention in part as follows:
 21 "Coding systems utilizing machine-readable coding are disclosed. . . . the coding may be applied to
 22 objects such as casino chips . . ." Schuck Supp. Decl., Ex. Q, United States Patent No. 4,814,589 ("Storch
 23 Patent"), Abstract. Likewise, the Fisher patent summarized its invention as follows:

24 A gaming chip that has a circular bar code imprinted thereon so as to convey information
 25 about the issuer of the chip, the chip's denomination, and a serial number which can be
 26 utilized to verify the authenticity of the chip.

27 Schuck Supp. Decl., Ex. R, United States Patent No. 5,103,081 ("Fisher Patent"), Abstract.

28 The '647 patentees filed an amendment on January 20, 1997. Id., at SM-MP 000908-000921. In
 29 this amendment, the patentees attempted to distinguish their invention from the prior art cited by the
 30 examiner, id., but all claims were rejected again on the basis of obviousness on April 9, 1997. Id., at SM-
 31 MP 000924-000925.

1 The patentees filed the '915 Application, which was a continuation of the '779 Application, on
 2 October 27, 1997. Id., at SM-MP 000950-000952, 000955-000963. In the Preliminary Amendment to the
 3 '915 Application, the patentees revised their claims to disclose a system that merely counts the "edges" of
 4 chips to determine their number. See id., at SM-MP 000960-000961.

5 The patentees expressly distinguished the '915 Application from prior art cited by the examiner in
 6 his prior rejection, which reads bar codes or other symbols around the circumference of gaming chips. Id.

7 In view of the Fisher and Storch patents, although the Examiner is correct that Storch
 8 teaches counting stacks of chips, the method of counting stacks of chips by the Storch
 9 patent is performed through use of a binary code that is placed on the edge of each chip.
 10 **The present invention does not utilize binary codes on the edge of each chip.** Instead,
 11 the processor determines the presence or absence of a stack of gambling chips in an image
 12 being processed by computing the variance values for an array of data stored in the
 13 system's ram. See page 10, lines 10-14. The variance values illustrate the point in the
 cross-section where the variance grows large enough to indicate a statistical edge value.
 The number of statistical edges the processor detects helps the computer determine the
 number of gambling chips in a stack. **This method of determining the number of chips**
in a stack of chips is unique and substantially different from that disclosed in Storch
or Fisher because it does not require use of any identifying markings (as required by
 the Storch or Fisher patents).

14 Schuck Decl., Ex. K, '647 Pros. Hist., at SM-MP 000960. In response to the Patentees' amendments, the
 15 examiner issued a notice of allowability for the '647 Patent on February 3, 1998. Id., at SM-MP 000964.
 16 The '647 Patent issued on July 14, 1998.

17 B. Defendants Proposed Claim Constructions for the '647 Patent

- 18 1. "chip edges" (claims 1, 5) and "edges of each chip" (claim 6) & "edges of each
 19 individual chip" (claims 13, 15)

20 The parties propose the following definitions:

21
 22
 23
 24
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 26
 27
 28

Claim Term	Defendants' Construction	Shuffle Master's Construction
chip edges edges of each chip edges of each individual chip	<p>The line of intersection between the side and top or the side and bottom of a chip.</p> <p>In a two-dimensional image of a chip, the line of intersection between the chip and the surrounding space or other chips.³⁰</p>	A chip edge in an image is a dividing line or point of transition between a chip and something that is not a chip.
	<p>The lines of intersection of two surfaces.</p> <p>In a two-dimensional image of a chip, the line of intersection between the chip and the surrounding space or other chips.</p>	[defining "edges"] An edge is a dividing line or point of transition. ³¹

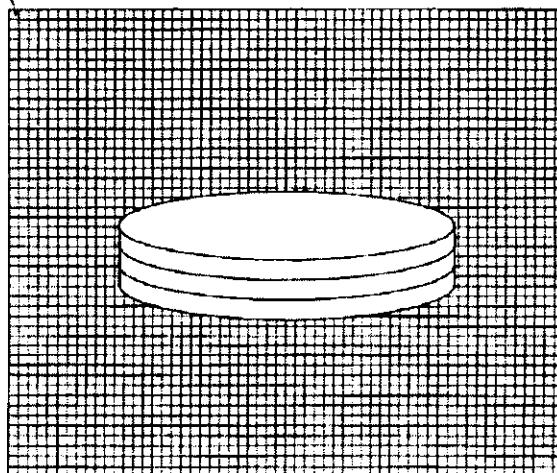
Defendants' proposed constructions properly explain the disputed terms, in their context, in a way that would be meaningful to a jury. These definitions are based on the intrinsic evidence and the ordinary meaning of the terms. In the '647 Patent, "chip edges," "edges of each chip," and "edges of each individual chip" clearly refer to the lines defining the boundaries of the chip in a 2-dimensional image, not to the chip's side.

The '647 Patent discloses that "the boundaries of each individual chip can be determined as being between the upper, lower, left and right edges." Schuck Supp. Decl., Ex. J, '647 Patent, at 6:24-26. Similarly, "[t]he number of chips bet can be determined by the processor counting the number of edges detected. For example, 2 edges=1 chip, 3 edges=2 chips, 4 edges=3 chips, etc." *Id.* at 6:60-63. Moreover, that the "edges" are the outer boundaries of the chips is clearly illustrated in Figure 2 of the '647 Patent. Schuck Supp. Decl., Ex. J, '647 Patent, Figure 2.

³⁰ Defendants proposed the second sentence of this definition during the meet and confer process. Thus, Plaintiff's criticism that Defendants' proposed definition fails to address images is meritless. Brief, at 48. In focusing on the two-dimensional image, Plaintiff would obscure the fact that the image is of a three-dimensional object with edges (a chip)--edges that are represented in the image.

³¹ Brief, at 48.

1 FIG. 2 PV 1,1,~



10 Thus, "edges" in the '647 Patent refers to the outer perimeter of the chip, and not any markings or patterns
11 on the chip.

12 The patentees' representations to the Patent Office during prosecution of the '647 Patent confirm
13 this meaning of "chip edges." In prosecution, the patentees distinguished the claimed invention from prior
14 art patents that read coded information on the side of the chips

15 The number of statistical edges the processor detects helps the computer determine the
16 number of chips in a stack. This method of determining the number of chips in a stack is
17 unique and substantially different from that disclosed in Storch or Fisher because it does
not require the use of any identifying markings... .

18 Schuck Supp. Decl., Ex. K, '647 Patent Pros. Hist., at SM-MP 000960; see also id., at SM-MP 000961.
19 The patentees' representations to the Patent Office during prosecution must be considered in determining
20 how the patentee construed the claim language, and how those claims are limited. See E.I. du Pont de
Nemours v. Phillips Petroleum Co., 849 F.2d 1430, 1438 (Fed. Cir. 1988); Jonsson v. Stanley Works, 903
21 F.2d 812, 817 (Fed. Cir. 1990); Watts, 232 F.3d at 882-83; Based on the patentees' representations,
22 identifying the edges of chips should not be read so broadly as to be conflated with reading markings
23 imprinted or otherwise located on the side of the chip around its circumference. See Schuck Supp. Decl,
24 Ex. K, '647 Patent Pros. Hist., at SM-MP 000960-000961.

25 Moreover, Defendants' proposed interpretation of edge is consistent with the term's ordinary
26 meaning in general parlance and in the field. For three-dimensional objects, edges are generally defined
27 as "the line of intersection of two surfaces." See, e.g., id., Ex. B, American Heritage Dict. ("The line of
28 intersection of two surfaces"); id., Ex. L, Encarta World English Dictionary ("Encarta World Dict."),

1 1999, at 569 ("the line where two surfaces of something solid meet. A cube has 6 faces and 12 edges").
 2 Plaintiff concedes this definition. See Brief, at 48.

3 In two-dimensional images, "edges" are lines that form the outer boundaries of an object and
 4 something else. See e.g., Schuck Supp. Decl., Ex. B, American Heritage Dict. ("A dividing line; a
 5 border"); id., Ex. G, WordNet ("a line determining the limits of an area [syn: boundary, bound]").
 6 Technical dictionaries demonstrate that the term's meaning in the field of image processing is entirely
 7 consistent with the term's ordinary meaning. See id., Ex. C, Dict. of Comp. Science, at 154 (defining
 8 "edge" as "a substantial change over a small distance, in the values of an image's pixels -- typically in the
 9 gray level values. **Edges** can be curved or straight and are **important because they are often the**
 10 **boundaries between objects in an image.**") (emphasis added); see also id., Ex. M, IEEE 100: The
 11 Authoritative Dictionary of IEEE Standards Terms, 7th ed., 2000, at 351 (defining "edge": "In image
 12 processing, a set of pixels belonging to an arc and having the property that pixels on the opposite sides of
 13 the arc have differing gray levels.").

14 Additionally, the '647 Patent calls for application of an "edge detection filter" to the image of
 15 chips. See Schuck Supp. Decl., Ex J, '647 Patent, 8:1-7. In the art, edge detection is defined as "the ability
 16 of a machine vision system to locate and follow boundaries." Id., Ex. N, The Illustrated Dictionary of
 17 Electronics, 2001, at 227. Indeed, Plaintiff's expert, Dr. Castleman equates the term "edge" with the
 18 boundary of an object. In a section on edge detection in his textbook, Castleman wrote:

19 Another approach to establishing the boundaries of the objects in an image is to first
 20 examine each pixel and its immediate neighborhood to determine whether the pixel is, in
 fact, on the boundary of an object.

21 See Schuck Supp. Decl., Ex. O, Digital Image Processing, by Dr. Kenneth Castleman ("Castleman
 22 Textbook"), at 464. Castleman continues to define such pixels on the object's boundaries as "edge
 23 points." Id. Thus, even for Plaintiff's own expert, an edge is a **boundary of an object**. Thus, the
 24 Defendants' proposed construction is entirely consistent with both the intrinsic evidence and the plain
 25 meaning of the terms.

26 Plaintiff's proposed construction of "edge" -- "an edge is a dividing line or point of transition" --
 27 takes the term out of context, is contrary to the prosecution history and is inconsistent with Plaintiff's own
 28 construction of "chip edges." First, because "edges" in the patent is always used in association with chip,

1 Plaintiff's attempt to construe "edge" without any reference to a chip is improper. See E-Pass Techs., Inc.
 2 v. 3Com Corp., 343 F.3d 1364, 1368 (Fed. Cir. 2003) ("When determining a claim term's ordinary
 3 meaning, we also look to the usage of the disputed claim term in context."); Brookhill-Wilk 1, LLC v.
 4 Intuitive Surgical, Inc., 334 F.3d 1294, 1299 (Fed. Cir. 2003). Each and every time the word "edges"
 5 appears in claims 1, 5, 6, 13, or 15 of the '647 Patent, it appears in conjunction with the word "chip" in
 6 one of the following phrases: "chip edges," "edges of each chip," or "edges of each individual chip."
 7 Thus, any attempt to construe the term "edges" divorced from a wagering chip is inappropriate.

8 Furthermore, Plaintiff's proposed construction potentially could encompass transitions or dividing
 9 lines that occur *on the surface of the chip*. As detailed above, however, during prosecution the patentees
 10 clearly disavowed a system reading markings or codes on the sides of the chips. See Schuck Supp. Decl.,
 11 Ex. K, '647 Pros. Hist., at SM-MP 000960-000961. Instead, the claimed invention was distinguished over
 12 the prior art on the ground that it detects the edges of the chip to identify and count the chips. Finally,
 13 Plaintiff's proposed definition of "edge" is inconsistent with Plaintiff's own definition of "chip edge" -- "a
 14 dividing line or point of transition between a chip and something that is not that chip." Brief, at 48. Any
 15 construction of "chip edges," "edges of each chip," or "edge of each individual chip" must refer to the
 16 intersection of surfaces of the chip or, in a two-dimensional image, the boundary between the chip and
 17 space or other chips. Plaintiff's overly expansive definition of "edge" should be rejected and Defendants'
 18 definitions adopted.

19 Plaintiff's proposed construction of the term "chip edges" -- "a chip edge in an image is a dividing
 20 line or point of transition between a chip and something that is not a chip" -- is consistent with
 21 Defendants' to the extent that it addresses two-dimensional images. Plaintiff's definition, however, is
 22 inferior to that of Defendants because it fails to address a three-dimensional chip.

23 **2. "pixel" (claims 2, 3, 6, 12-15)**

24 Plaintiff proposes that "pixel" be construed to mean "the smallest unit of a digital image." Brief, at
 25 51-52. Plaintiff first proposed this definition during the parties' telephonic meet and confer. Defendants
 26 agreed to review this proposed definition. Upon review, and in the interests of judicial efficiency,
 27 Defendants will not dispute this construction.

1 3. "edge detection filter" (claims 6, 13, 15)

2 Claim Term	3 Defendants' Construction	4 Shuffle Master's Construction
5 edge detection filter	6 A software program or algorithm created for the purpose of differentiating pixels representing a chip edge from other pixels.	7 A software program or algorithm that detects an edge in an image. ³²

8 Plaintiff correctly asserts that the parties agree that an "edge detection filter" is software or an algorithm. See Brief, at 50. The parties dispute, however, what "edges" are detected. Plaintiff would broadly construe the term to cover any "edges" in an image, including those that may bound colored regions on the side of a chip. But this is contrary to both the claim language providing context to the term and the prosecution history. The intrinsic evidence shows that the asserted claims are limited to use of an "edge detection filter" to identify the "edges" of chips only. Accordingly, Defendants' proposed construction should be adopted.

13 The context of the term "edge detection filter" in each claim where it appears demonstrates that the edges to be detected are chip edges.

15 6. A gambling chip recognition system . . .

16 A processor electrically connected to said imager, said processor determining the number of chips within the stacked pile of one or more chips *by identifying the edges of each chip*, said edges of each chip identified by computing the pixel variance value for pixels comprising said image, comparing said pixel variance values to a threshold variance values [sic] and applying an **edge detection filter** to said pixels comprising said image.

19 13. The system of claim 1 wherein *the edges of each individual chip* within the stacked pile of chips *is identified* by computing a pixel variance value for pixels comprising said image, comparing each said pixel variance value to a threshold variance value and applying an **edge detection filter** to said pixels comprising said image.

21 15. The method of claim 5 wherein said processing step includes the steps of: *identifying the edges of each individual chip* within the stacked pile of chips by computing a pixel variance value for pixels comprising said image; comparing each said variance value to a threshold variance value; and applying an **edge detection filter** to said pixels comprising said image.

24 Schuck Supp. Decl., Ex. J, '647 Patent, 7:65-8:7; 8:33-39; 8:48-56. Thus, the claims disclose identification of **chip edges** (as defined in Section II.C.1) by employing a chip edge detection filter. Again, by attempting to define edge detection filter more broadly, Plaintiff attempts to broaden the claim

28 ³² Brief, at 50.

1 language by improperly taking terms out of their context. See E-Pass Techs., 343 F.3d at 1368; Brookhill-Wilk 1, 334 F.3d at 1299. From the claims, it is clear that in the asserted claims the edge detection filter
2 detects chip edges.

3 The specification supports this interpretation. "The edges of each individual chip is located [sic]
4 by applying a sobel edge detection filter in both horizontal and vertical directions." Schuck Supp. Decl.,
5 Ex. J, '647 Patent, 5:54-56. The explanation of the process is even more explicit:

6 Utilizing the preset information regarding the height of the chips for any given chip length,
7 the boundaries of each individual chip can be determined as being between the upper,
8 lower, left and right edges.

9 Id., 6:23-26. The specification clearly states that the process is conducted for detecting **only chip edges**:
10 "processor 12 performs the identification processes to derive those portions of the image which uniquely
11 contain **only the edge information of one or more chips.**" Id., 5:52-54. Thus, the edge detection filter
12 detects the lines that form the boundaries of the chip, as illustrated in Figure 2 of the '647 Patent.

13 If there is any doubt, the prosecution history also clearly indicates that the edge detection filter is
14 used to detect chip edges. When amending the claims to overcome a rejection, the patentees expressly
15 distinguished their claimed invention from prior art that read patterns on the surface of the chip.

16 The number of statistical edges the processor detects helps the computer determine the
17 number of chips in a stack. This method of determining the number of chips in a stack is
unique and substantially different from that disclosed in Storch or Fisher because it does
not require the use of any identifying markings . . .

18 Schuck Supp. Decl., Ex. K, '647 Pros. Hist., at SM-MP 000960. These representations to the Patent
19 Office during prosecution are binding; the patent holder cannot expand the scope of the claims through
20 claim construction now that the patent has issued. See E.I. du Pont de Nemours, 849 F.2d at 1438;
21 Jonsson, 903 F.2d at 817; Watts, 232 F.3d at 882-83. Moreover, as discussed above, the understanding
22 that an edge detection filter identifies the boundaries of an object is consistent with Plaintiff's own expert's
23 explanation of edge detection. See Schuck Supp. Decl., Ex. O, Castleman Textbook, at 466 ("establishing
24 the boundaries of objects in an image").

25 Based on the patentees' own representations, the claimed invention clearly discloses identification
26 of chip edges that represent the boundaries of the chip, not information on the side of the chip. Plaintiff
27 should not be permitted to expand the scope of the claim by construing isolated terms so that the sum of
28

1 the parts is greater than the whole. Defendants' proposed construction -- based on ordinary meaning, the
 2 claim language and the intrinsic evidence -- should be adopted.

3 **4. "image converter" (claims 2, 3)**

4 As with "edge detection filter," the parties' dispute regarding the term "image converter" in claims
 5 2 and 3 is fairly narrow as can be seen from their proposed constructions.

6 Claim Term	7 Defendants' Construction	8 Shuffle Master's Construction
image converter	A device for converting an analog video image to a digital image	A device capable of converting a video image to a digital image or representation. ³³

9 All agree that an "image converter" is a device for converting an image to a digital image. Plaintiff,
 10 however, argues the image to be converted would not necessarily be analog. But a person of ordinary
 11 skill in the art would understand the term, in its context, to mean a device capable of converting an analog
 12 video image to a digital image.

13 Notably, the term "image converter" is not used in the '647 Patent outside of claims and there is no
 14 discussion of the term in the prosecution history. Thus, the term must be construed as it would be
 15 understood in its context by a person of ordinary skill at the time of the invention. See Quantum Corp. v.
 16 Mountain Computer, Inc., 1987 WL 45645, *7 (N.D. Cal. Oct. 8, 1987) ("[T]he proper focus for inquiry
 17 for purposes of claim interpretation, whether questions of infringement or validity are involved, is what
 18 one of skill in the art would have understood the claim to mean at the time of the application for the patent
 19 containing the claim was originally filed."); see also Bayer AG v. Biovail Corp., 279 F.3d 1340, 1348
 20 (Fed. Cir. 2002).

21 First, the term must be considered in the context of the claims. See E-Pass Techs., Inc. v. 3Com
 22 Corp., 343 F.3d 1364, 1368 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d
 23 1294, 1299 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered
 24 in determining the ordinary and customary meaning"). Here, the language of both claims states that
 25 the "image converter" converts the video image to a digital image.

26 2. The computer implemented gambling chip recognition system of claim 1 wherein said
 27 imager comprises:

28 ³³ Brief, at 53.

1 an image converter for converting a video image *to a digital image* . . .

2 3. The computer implemented gambling chip recognition system of claim 2 wherein said
image converter converts said image *to a digital image* . . .

3 Schuck Supp. Decl., Ex. J, '647 Patent, 7:32-35; 7:37-40 (emphasis added). Patent language calling for
4 conversion **to** a digital image suggests that the image was not initially in digital form. See Abbott Decl.,
5 ¶ 15.

6 Second, although the specification does not refer to the "image converter," the specification
7 discusses a "digitizer." See, e.g., Schuck Supp. Decl., Ex. J, '647 Patent, 3:4-25, 4:52-5:31, & Fig. 1. A
8 person of ordinary skill in the art would understand a "digitizer" to be a device for converting an analog
9 signal to a digital image. See Abbott Decl., ¶ 16. Indeed, even Plaintiff's expert acknowledges that a
10 digitizer functions to convert an analog video signal to digital. See Schuck Supp. Decl., Ex. O, Castleman
11 Textbook, at 23 ("One can use the [video] camera as an image digitizer simply by sampling the video
12 signal with a fast analog-to-digital converter."). In claims 2 and 3, there is no reference to a "digitizer" but
13 the "image converter" appears to assume that role. See Abbott Decl., ¶ 17. Accordingly, a person of
14 ordinary skill in the art would understand the "image converter" to be a device for converting an analog
15 signal into digital image(s). Id.

16 Finally, in light of the state of the art at the time of the invention, a person of ordinary skill in the
17 art would understand that the "image converter" was transforming an analog signal, as analog imagers
18 were most commonly in use. Id., at ¶ 18. "[T]he proper focus for inquiry for purposes of claim
19 interpretation, whether questions of infringement or validity are involved, is what one of skill in the art
20 would have understood the claim to mean at the time of the application for the patent containing the claim
21 was originally filed." See Quantum Corp., 1987 WL 45645, *7; see also Bayer AG, 279 F.3d at 1348; E.I.
22 du Pont de Nemours & Co., 656 F. Supp. at 1373. The '647 Patent matured from a continuation of Patent
23 Application No. 539,779, filed on October 5, 1995. Accordingly, the claims must be construed from the
24 perspective of a person of ordinary skill in the art in October of 1995.

25 The patent states that "[t]he gambling chip recognition system imager 16 is comprised of a
26 plurality of video cameras." Schuck Supp. Decl., Ex. J, '647 Patent, 3:27-29. In 1995, most video cameras
27 were analog, not digital. See Abbott Decl., ¶ 19. This is particularly true of commercially available
28 cameras. Id. The specification expressly states that the cameras employed were those commercially

available: "Each camera being commercially available and using the conventional rasters and scanning rates." Schuck Supp. Decl., Ex. J, '647 Patent, 3:28-30. Thus, a person of ordinary skill in the art would reasonably understand the video camera of the '647 Patent to be an analog device and, therefore, would understand the "image converter" to convert *analog* images to digital images. See Abbott Decl., ¶ 20.

Plaintiff's arguments are inapposite. First, Plaintiff argues that the patentee differentiated between analog and digital *storage*. See Brief, at 53. Although digital cameras were not common in October of 1995, digital storage of images was common, at least in industrial applications. See Abbott Decl., ¶ 21. Thus, the patentee may not have found it worthwhile to specify that images were initially analog -- that would have been presumed -- only that conversion to digital for processing was necessary.

In addition, Plaintiff's expert, Kenneth Castleman opines that "[v]ideo information is not necessarily in analog form." Castleman Decl., ¶ 17. This assertion, however, misses the point. Whether video information can be digital is not relevant; the issue is what was understood by a person of ordinary skill in 1995 -- the time of the invention. At that time, in light of the patent claim language, a person of ordinary skill in the art would conclude that the "image converter" was included in the claims to convert an analog video signal to digital image(s).

5. "frame grabber" (claim 7)

The parties' proposed definitions of "frame grabber" are similar:

Claim Term	Defendants' Construction	Shuffle Master's Construction
frame grabber	A device for converting analog video information to a digital still image.	A device capable of converting a video image to a digital still image or representation. ³⁴

The central dispute between the parties is whether the "video information" that is converted to "digital representations" is analog. In light of the claim language, the specification and the knowledge attributable to a person of ordinary skill in the art, one would conclude that a "frame grabber" converts *analog* images to digital representations. The claim language itself suggests that the "frame grabber" performs such a function.

7. The gambling chip recognition system of claim 6 wherein said imager includes a video camera electrically connected to a frame grabber, said frame grabber capturing frames of

³⁴ Brief, at 53.

1 video images generated by said video camera and *converting* said video images *to digital*
 2 representations.

3 Schuck Supp. Decl., Ex. J, '647 Patent, 8:7-11 (emphasis added). As with the term "image
 4 converters," the claim language indicates conversion *to* a digital representation; suggesting that the initial
 5 image is analog, not digital.

6 The use of the term in the specification supports this view. In the patent specification and figures
 7 (but in no claims), the term appears as "frame grabber digitizer" and "frame digitizer," respectively. See
id., 3:9-10 & Fig. 1. However, Plaintiff cannot argue that the term "frame grabber" without "digitizer"
 8 appended to it does not include a digitizer. The specification clearly explains that the "frame grabber"
 9 digitizes the image: "FIG. 2 is a graphical image of the captured image of a stack of gambling chips *after*
 10 *being digitized by the frame grabber* shown in FIG. 1." Id., 2:43-46 (emphasis added). Thus, the
 11 patentees clearly explain that the frame grabber "digitizes."

12 To a person of ordinary skill in the art, "digitizer" or the verb "digitizing" refers to converting an
 13 analog signal to a digital image. See Abbott Decl., ¶ 16. Technical dictionaries support this
 14 understanding. See Schuck Supp. Decl., Ex. P, IBM Dictionary of Computing, 1994, at 198-199
 15 ("digitize": "To convert an analog signal into digital format . . . See also analog-to-digital conversion
 16 scanning"). Given the association of the term "frame grabber" with "digitization," a person of ordinary
 17 skill in the art would conclude that the "frame grabber" converts **analog** images.

18 This meaning is reinforced by the state of the art at the time of the invention. As discussed above,
 19 most commercially available cameras in 1995 -- the time of the invention -- were analog cameras. See
 20 Section II.C.4, supra; Abbott Decl., ¶ 19. Thus, a person of ordinary skill would understand that it would
 21 be necessary to convert video images to digital images for processing. See Abbott Decl., ¶ 22. In the
 22 context of claim 7, a person of ordinary skill in the art would understand that the "frame grabber"
 23 performs this function. Id.

24 Even Plaintiff's expert, Dr. Castleman, acknowledges that a frame grabber is understood to be a
 25 device that converts analog information to digital information.

26 One can use the [video] camera as an image digitizer simply by sampling the video signal
 27 with a fast **analog-to-digital** converter . . . A *frame grabber* is a digitizer that stores this
 28 high speed data stream in a solid-state memory and then feeds it out at a slower rate to a
 more permanent storage device.

1 Schuck Decl., Ex O, Castleman Textbook, at 23-24 (emphasis added, italics in original). Accordingly,
 2 Defendants' proposed definition, including the word "analog," is proper and should be adopted.

3 **C. Indefinite Claim Terms or Phrases in the '647 Patent**

4 **1. The term "said frame" is indefinite**

5 In claim 3 of the '647 Patent, the term "said frame" is indefinite and cannot be construed because it
 6 lacks an antecedent basis. Claim 3 reads:

7 3. The computer implemented gambling chip recognition system of claim 2 wherein said
 8 image converter converts said video image to a digital image by converting each pixel of
 9 data within **said frame** of said video image to a digital representation.

10 Schuck Supp. Decl., Ex. J, '647 Patent, 7:37-41 (emphasis added). In patent claim drafting, the word
 11 "said" indicates that the specific claim term, in this case "frame," has been introduced previously. See
 12 Astra Aktiebolag v. Andrx Pharmaceuticals, Inc., 222 F. Supp. 2d 423, 447 (S.D.N.Y. 2002). A term is
 13 indefinite "when it contains words or phrases whose meaning is unclear. The lack of clarity could arise
 14 where a claim refers to "said [term] . . . where the claim contains no earlier recitation or limitation of [the
 15 term] and where it would be unclear as to what element the limitation was making reference." See id., at
 16 458 (quoting Manual of Patent Examining Procedure ("MPEP") §2173.05(e)). Thus, a claim is indefinite
 17 when it contains words that lack antecedent basis. Id.; see also Intel Corp. v. Broadcom Corp., 172 F.
 18 Supp. 2d 478, 485 (D. Del. 2001); see also MPEP § 2173.05(e), Lack of Antecedent Basis (8th ed. 2001).

19 In claim 3, the word "frame" is preceded by the word "said." The use of this definite article
 20 mandates that the term "frame" was previously used in claim 1, 2 or 3.³⁵ See Astra, 222 F. Supp. 2d at
 21 458. The word "frame" is not used at all in claims 1, 2 or 3, except as the term in dispute ("said frame").
 22 Thus, "said frame" lacks antecedent basis and is therefore indefinite.

23 Plaintiff argues that the frame of "said frame" must be the frame being converted by the image
 24 converter. Brief, at 54. The '647 Patent, however, expressly discloses conversion of a video image.
 25 Schuck Supp. Decl., Ex. J, '647 Patent, at 7:38-39. A video signal incorporates a sequence of image
 26 frames; indeed, it is the existence of multiple frames that creates the illusion of movement. See Abbott
 27 Decl., ¶ 24. Thus, even if Plaintiff is correct that the frame is part of the video information being

28 ³⁵ Claim 3 is dependent upon claim 2, which in turn is dependent upon claim 1. See Schuck
 29 Supp. Decl., Ex. J, '647 Patent, 7:32-33, 7:37-38.

1 converted to a digital image, there is still not specificity as to which particular frame -- the use of "said"
2 requires a specific antecedent -- is at issue. Thus, the term is indefinite.

3 DATED: March 25, 2005

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